

**DEEP GEOLOGIC REPOSITORY
JOINT REVIEW PANEL**

HEARING HELD AT

Public Hearing Room
14th floor
280 Slater Street
Ottawa, Ontario

Wednesday, March 20, 2013

JOINT REVIEW PANEL

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Ottawa, Ontario

--- Upon commencing on Wednesday, March 20, 2013
at 9:00 a.m.

Opening Remarks

MS. MCGEE: Bonjour, mesdames et messieurs.
Bienvenue à la réunion publique de la Commission d'examen
conjointe pour le projet de stockage de déchets
radioactifs à faible et moyenne activité dans des
formations géologiques profondes.

Welcome to the third technical information
session of the Joint Review Panel for the Deep Geologic
Repository Project for Low and Intermediate Level
Radioactive Waste.

My name is Kelly McGee. I am the co-
manager for the Joint Review Panel.

J'aimerais aborder certains aspects
touchant le déroulement de cette réunion.

The public review and comment period for
this project began on February 2nd, 2012. Today's meeting
is a technical information session with presentations by
the Applicant, Ontario Power Generation.

The Panel encourages everyone with an

interest in this project to regularly visit the online public registry for the latest editions. If you have not already done so, please also take a minute to visit and register as an interested party. This will ensure that all major announcements by the Panel are automatically forwarded to you by email.

If at any time during the review you have information that you wish to bring to the attention of the Panel, please direct your correspondence to the Panel Secretariat.

Alternatives for contacting the Secretariat are available on the Canadian Environmental Assessment Agency website for this project.

The Panel co-managers, together with other members of the Panel Secretariat, will ensure that information for the Panel's consideration is brought to its attention and all submissions are posted on the public registry.

During today's business, we have simultaneous translation. Des appareils de traduction sont disponibles à la réception. La version française est au poste 2. The English version is on Channel 1. Please keep the pace of your speech relatively slow so that translators can keep up.

La réunion est enregistrée et transcrite

textuellement. Les transcriptions se font dans l'une ou l'autre des langues officielles, compte tenu de la langue utilisée par le participant. Les transcriptions seront disponibles sur le site web de la Commission dès la semaine prochaine.

Please identify yourself before speaking so that the transcripts are as clear and complete as possible.

I would also like to note that this session is being video webcasted live and that the webcast will be archived on the CNSC website.

Please silence your cell phone and other electronic devices.

Dr. Swanson, the Chair of the Joint Review Panel, will preside at today's meeting.

Dr. Swanson.

THE CHAIRPERSON: Good morning and welcome to the third and final technical information session of the Deep Geologic Repository Joint Review Panel.

My name is Dr. Stella Swanson. Welcome to everyone here today in person and to those joining us via the webcast.

I would like to begin by introducing the members of the Joint Review Panel. On my far right is Dr. Gunter Muecke and on my left is Dr. Jamie Archibald.

You have heard from the Panel's co-manager, Kelly McGee. Seated to my right is counsel Denis Saumure.

I would like to address a few matters before we begin today's presentations.

At each of the Panel's previous public sessions, I stressed the utmost importance that the Panel Members place on our impartiality, neutrality and transparency. These will continue to be essential measures of the Panel's review as we near completion of the public comment phase and move into the public hearing phase of our review.

All submissions to the Panel and all of the information requests originating with the Panel are publicly available on the online public registry for this project. Only in exceptional circumstances such as security-related information will a document not be publicly available.

It is a cornerstone of this process to encourage everyone's participation, including federal, provincial and municipal government organizations, Aboriginal groups and members of the public.

Through access to documents on the online public registry, live webcasts at public sessions such as today, and archived access to both transcripts and webcasts, the Panel is doing everything we can to be open,

accessible and transparent.

The goal of today's technical information session is to provide additional information on such socioeconomic subjects as the selection of the regional and local study area for the project, stakeholder engagement, predictions of effects related to Aboriginal interests, noise impacts, the predicted significance of socioeconomic effects and the economics modelling.

The Panel recognizes that its authority in the area of socioeconomic issues is bound by the *Nuclear Safety and Control Act* and the *Canadian Environmental Assessment Act 2012*.

The protection of the environment, together with the health and safety issues associated with each project must be the basis for the Panel's environmental assessment report and licensing decision. These are the statutory requirements imposed on the Panel.

This technical information session is not intended to create expectations that the Panel plans to exceed its statutory mandate.

When the Panel acts, it must assure itself that it is acting within the confines of the authority granted by Parliament.

The Panel acknowledges that social acceptability is not a criterion that appears in the NSCA

or CEAA 2012.

However, while social acceptability could not provide a basis to grant or refuse a licence, it remains a matter that OPG should address.

The Panel encourages OPG to take all necessary measures to address acceptability considerations of the project at the local and regional levels.

The Panel hopes that today's socioeconomic technical information session will serve not only to expand upon the information required by the Environmental Impact Statement Guidelines, but will also serve as a basis for future public engagement by OPG and identification of best practices that may guide its efforts in these areas.

While the agenda for today's technical information session has generous allotments of time for questions from the Panel, our questions will be limited to those associated with the purpose of today's meeting.

Today's technical information session was organized to provide an efficient and effective presentation of new information that the Panel requires as part of our public review.

The purpose of this session is not to test either the validity of information already on the public record or the new information presented today.

The public was invited to attend this session either in person or by watching the webcast. The Panel encourages anyone with questions arising from today's session to forward the questions in writing to the Panel Secretariat. The Panel will review all questions related to information presented at today's session and determine if an answer to the question is required in order for Ontario Power Generation to fulfill its obligations under the Environmental Impact Statement Guidelines.

In addition to submitting questions arising from today's session, the ongoing public review and comment period is an opportunity for everyone to provide their views to the Panel on whether the Environmental Impact Statement and documents submitted in support of the licence application adequately address the guidelines issued to Ontario Power Generation.

On March the 8th, 2013, the Panel sent its tenth package of information requests to Ontario Power Generation. The Panel expects that IR package number 10 will be the last package provided to Ontario Power Generation that includes information requests from our own review.

We will continue to submit additional requests, if necessary, based on other submissions

received before the end of the comment period. As such, the Panel encourages anyone that has not yet participated in the public review and comment period to do so as soon as possible. The Panel expects to be in a position to announce the new end date for the review and comment period in the near future.

Thank you.

I would now like to call upon Ontario Power Generation to begin their presentation.

Mr. Sullivan, Ms. Barker, the floor is yours.

**Opening remarks by
Gord Sullivan (OPG) and
Diane Barker (NWMO)**

MR. SULLIVAN: Thank you, Dr. Swanson, and good morning.

For the record, my name is Gord Sullivan, Project Manager for the Deep Geologic Repository Project at Ontario Power Generation.

We are pleased to be here to provide the Joint Review Panel with additional information on social-economic impacts as described in OPG's Environmental Impact Statement, as requested in your December 13th,

2012, and February 12th, 2013 letters to Ontario Power Generation.

I am accompanied here today, on my far-right, by Frank King, Vice President and Chief Engineer, Nuclear Waste Management Organization. On my immediate right is Diane Barker, Manager, Environmental Assessment at the Nuclear Waste Management Organization who will be opening the session today.

We also have other individuals here today who will be making presentations and they will be introduced before their presentations begin.

I will now turn over to Diane Barker.

Thank you.

MS. BARKER: Thank you, Gord.

Diane Barker, for the record, and good morning, Madame Chair, and Chair panelists.

To begin today's technical information session, I will provide an overview of human settlement in Bruce County and also context for the Socio-Economic Environmental Assessment.

Throughout the first half of the 18th Century, the Anishnabek or Jubilee Nation and the Métis Nation inhabited Saugeen Territory.

Oh! Okay.

In 1867, Bruce was established as an

independent county. By the late 1800s, European settlement had begun in earnest on Bruce Peninsula. Kincardine's first settlers came from Scotland and were joined by settlers from Ireland, England and Germany. They helped to clear the wooded land for farming and developed the harbour which was used for shipping agricultural products and as a base for the fishing industry.

By 1873, the agricultural industry was burgeoning and along with the furniture manufacturing dominated the economy for nearly a century.

The Municipality of Kincardine, which is shown coloured in pink on slide number 2, is also surrounded by the other municipalities included in the Regional Study Area.

Immediately to the North of the larger coloured areas, at Southampton, on the Bruce Peninsula to the North, shown in brown, are the Chippewas of Saugeen and Chippewas of Nawash First Nation. An historic Métis Community is located at Southampton and another Métis Community Council is located at Owen Sound.

In the 1960's, Atomic Energy Canada Limited established Canada's first commercial CANDU reactor in Bruce Township creating an economic boom. The Douglas Point nuclear power plant began generating electricity in

1967 and continued operating until 1984.

The town of Kincardine, the Township of Kincardine and the Township of Bruce were amalgamated to form the Township of Kincardine/Bruce/Tiverton on January 1st, 1999 with boundaries identical to those of the municipality that had existed in 1855. The name was subsequently changed to the Municipality of Kincardine.

Construction of the existing Bruce nuclear power plant which includes eight reactors, a heavy water plant and a bulk steam plant began in 1969 and continued through 1987 when the last of the eight reactors went into service.

Kincardine is now home to one the largest nuclear power plants in the world owned by OPG and operated by Bruce Power.

The Bruce nuclear site is the largest single workplace in the Municipality of Kincardine with approximately 4,000 employees working at the site now, four employers, including Bruce Power, Ontario Power Generation, Hydro One, and Atomic Energy Canada Limited.

Throughout the years, the Bruce nuclear site has experienced fluctuations in employment levels as a result of regular maintenance outages, unit shutdowns and restarts, and the shutdown and subsequent demolition of the heavy water plants.

For example, the Environmental Assessment for the Bruce A refurbishment project predicted that an average of 1,200 on-site workers with a peak workforce of 1,800 workers would be required. The majority of these workers were anticipated to commute to the site either daily or weekly.

In contrast, the DGR Project is expected to employ an average of 120 workers and a peak of 200 workers during the site preparation and construction phase and 40 workers during the operations' phase.

The predicted socio-economic effects of the DGR Project are discussed in Section 7.10 of the Environmental Impact Statement. The approach used in this assessment reflects methods and information from other assessments for projects at the Bruce nuclear site.

As Dr. Swanson mentioned in her opening remarks in today's technical session, OPG will provide further information on the rationale for the study areas used in assessing socio-economic effects and of the conclusions reached regarding effects on Aboriginal traditional lands and use and resources, Aboriginal health, tourism, property values, and noise. Additional information on the input received throughout the stakeholder engagement process will also be provided.

Mr. Tomasz Wlodarczyk, as Senior Consultant

with AECOM Canada Limited will begin this technical information session by presenting the rationale for the local and regional study areas selected.

Mr. Wlodarczyk.

**PART 1 - SELECTION OF
REGIONAL AND LOCAL STUDY AREAS
Presented by Tomasz Wlodarczyk,
Senior Consultant, AECOM Canada Ltd.**

MR. WLODARCZYK: Thank you. Tomasz Wlodarczyk, AECOM. I was the Senior Reviewer for the socio-economic technical support document and I'd like to speak this morning regarding the socio-economic study areas and how were they defined, just to add clarity to the discussion today.

Study areas are basic building blocks in an environmental assessment. They are defined early in the process to focus the effects assessment. They are indicative; they are not absolute. They are typically adjusted to reflect local conditions, particularly in the social environment, in this case, to accommodate the structure and available data and information forces.

And they are really intended to ensure that effects are considered as broadly as possible. And, from

my experience, because they are defined early in the process, feedback on these study areas are few and far between from members of the public and stakeholders that participated in engagement activities.

In this case, for the socio-economic environment, both Local and Regional Study Areas have been defined -- the LSA is the Local Study Area, the RSA is referred to as a Regional Study Area -- and to guide the definition of these areas, we wanted to make sure that we define the Local Study Area to scope it to the areas that have the most direct project-related -- project relationship to the communities and where project-related effects are most likely to be measurable.

Similarly, as a guide, we want the Regional Study Area to be sufficiently large to capture possible cumulative effects indirect and induce project-related effects, again, that are likely and measurable.

With respect to the Local Study Area, this corresponds to the boundaries of the Municipality of Kincardine. Kincardine is the host municipality for the DGR Project.

The focus on the host municipality is consistent with professional practice in socioeconomic assessments. Once again, it is the area with the most direct relationship with the Bruce nuclear site and the

DGR project.

Kincardine was the LSA for past EAs at the Bruce nuclear site and we want to take advantage, to the greatest extent possible, the data that was available.

Slide 7 depicts the local study area with the red line being the boundaries of the Municipality of Kincardine, and the kind of yellow orange line depicting the Bruce nuclear site.

In terms of the regional study area, it was defined as the Bruce County with the exception of the Town of South Bruce Peninsula and the Municipality of Northern Bruce Peninsula. It does include the major residential areas outside of Kincardine nearest the DGR project. It excludes Kincardine, the local study area, simply to differentiate regional effects in neighbouring municipalities from those that are likely to be experienced within the Municipality of Kincardine, the host municipality.

Once again, consistent with other environmental assessments, the RSA has been defined to the neighbouring municipalities or to the Bruce nuclear site.

It also includes consideration of economic and nuisance-related effects simply because we don't -- our initial analysis suggested that these would not be measurable beyond the regional study area but likely

confined to the local study area.

The map on Slide 9 depicts the regional study area for the assessment. That is depicted with a purple line. Nested within that is the Municipality of Kincardine with the red line, and nested within that is the Bruce nuclear site.

There were some questions regarding the influence of the socioeconomic study areas on the assessment results. In this case there was one residual adverse effect identified in the socioeconomic assessment which related to decreased enjoyment of property due to increased noise levels near Baie du Doré during the site preparation and construction and decommissioning phases.

This effect is confined to well within the regional local study area boundaries in the area immediately adjacent to the Bruce nuclear site. Ultimately, this effect was assessed to be not significant.

We believe that changes to the local or regional study areas would not have altered the identification of this adverse effect or the assessment of its significance.

Let me now turn to the study areas for the Aboriginal interests. In this case it was the most appropriate that the regional study area for the

socioeconomic assessment was the most relevant to the assessment, with the exception of the fact that there are Aboriginal communities outside of this area.

So the assessment includes not only the regional study area depicted in the purple line on a previous map, but also the communities -- the First Nation communities associated with the Saugeen Ojibway Nation, the historic Saugeen Métis community, the Métis Nation of Ontario in Georgian Bay, and that includes signatories to their consultation protocol which is the Georgian Bay Métis Council, the Grey Owen Sound Métis Council and the Moon River Métis Council.

To date, the input received regarding the regional study area does not indicate any dissatisfaction.

Once again, with respect to the influence of the Aboriginal interest study, areas on the assessment results, the Aboriginal interest technical support document concludes or identifies one residual adverse effect, and that was, once again, related to temporary increased noise and dust at the Aboriginal burial site located within the Bruce nuclear site.

Once again, this adverse effect is confined to the site study area and ultimately it was assessed to be not significant.

Similar to the socioeconomic assessment,

changes to the Aboriginal interests local and regional study areas would not have altered the identified effects, nor the assessment of significance.

Thank you.

THE CHAIRPERSON: Thank you very much.

I'm going to now open the floor for questions from the Panel, and I actually will start.

So, Mr. Wlodarczyk, it appears to the Panel that the decision to limit the local study area to Kincardine relates primarily to two things; the fact that there was the hosting agreement with Kincardine and the fact that that was the same LSA that was used for the Bruce site in the past. Is this correct?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

Partially. As indicated in the presentation, the Municipality of Kincardine is also the municipality that has the most direct relationships to the Bruce nuclear site and the western waste management facility in terms of employment, in terms of relationships, in terms of the stakeholder engagement activities, the direct visibility of the property to the nature and character in the community. So those were also taken into account.

THE CHAIRPERSON: Thank you. So to follow-

up with that, could you expand a bit regarding the fact that we understand that many of the Bruce Power and OPG employees live in communities other than Kincardine. So we're a little bit confused still about that direct relationship argument.

MR. WLODARCZYK: It is correct that employees at the Bruce nuclear site live both -- the majority of which live within the local and regional study areas and some beyond. But once again, a vast majority of the residents have some sort of relationship, either financial or employment-wise, to the Bruce nuclear site, and those reside largely in Kincardine.

THE CHAIRPERSON: Thank you. And a third related follow-up question, what about the location of suppliers and contractors that would have a direct relationship with the DGR project?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

We address those issues in other sections of our presentation. As our experience indicates, there are many opportunities for supplies of goods and services to the project. Some of these are available within the regional study area, others are not.

But what typically happens, from our experience, is that a lot of niche suppliers tend to

develop in response to the opportunities that are presented.

THE CHAIRPERSON: Thank you.

Dr. Archibald, I believe you have a question?

MEMBER ARCHIBALD: Yes, thank you.

I'd like to address in a little bit more detail spatial distributions of the study areas that you've related. Is there a potential for spatial context to introduce any bias into the socioeconomic assessment?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

We try to make sure that the study areas capture the areas that have the most likely measurable effects. If an effect was deemed to be measurable beyond those study areas, we'd have a report on it. I don't believe that the word "bias" would be appropriate. I think it's more we're scoping it to where things are most measurable and likely.

MEMBER ARCHIBALD: Just another follow through; it appears as if your boundaries for the study areas follow roadway pathways. There are local communities just off these boundaries that are not considered or would not be considered. For example, how does the exclusion of other nearby communities, for

example in the peninsula area, that also may have close ties to Bruce of the OPG, affect the reliability of your baseline measurements?

MR. WLODARCZYK: Once again, we believe that the baseline assessment reflects where the effects are most likely to be measurable. And, in fact, the assessment results, largely through their economic modelling, which we'll address later, help demonstrate that in terms of where the effects are likely to be, once again, measurable.

The communities in the Bruce Peninsula have been engaged in the process and the feedback we received is that there would be nothing that we've heard that would change the study results or the study areas that we've defined.

MEMBER ARCHIBALD: Thank you.

Dr. Muecke?

MEMBER MUECKE: If I could just step back to the introduction for a second for some clarification, because in the EIS the number of employees for the project at its peak, during construction and site preparation, is given as 313, and you just mentioned, and other, that it is less than 200. Could you resolve or clarify for me which of these numbers and why it has changed?

MS. BARKER: Dr. Muecke, could you point us

in the EIS to where the number 313 is presented?

MEMBER MUECKE: I'm sorry, I just realized that I don't have the exact reference down, but it involved traffic to the site, and the statement says up to 313, the peak for the site preparation and construction, and it involved 218 vehicles traffic, in terms of traffic. So during the intermission I can find it on my computer, but maybe you can too.

MS. BARKER: Diane Barker, for the record. Our estimates for the number of employees at peak are -- remain at 200. We will check the EIS and confirm.

MEMBER MUECKE: I'll find you the right reference too.

Now, in terms of study areas, were the communities, other than Kincardine, consulted with respect to the inclusion into the local study area? Was there any consultation on that with the other municipalities?

MR. WLODARCZYK: Tom Wlodarczyk for the record.

A number of engagement activities were undertaken throughout the environmental assessment, including early on, where study areas and valued ecosystem components were presented to members of the public through various events, and particularly the open house events, and there were opportunities to provide feedback at those.

In addition, there's a long history of studies at the Bruce Nuclear Site and these studies areas have been almost, I could say, accepted by successive studies as being most relevant to activities at the Bruce Nuclear Site.

MEMBER MUECKE: You're leaving me a bit puzzled here, because if you take historic -- go back on historic records, communities change and sometimes change quite drastically with time. So how is that incorporated into your thinking?

MR. WLODARCZYK: Tom Wlodarczyk for the record.

This is true, communities do change over time. We present a historic record of population growth and the issues of amalgamation and land uses in the area, and the area is growing absolutely, but over time, it's been relatively stable. And we go back to our guiding principles of the areas that have the most direct relationship to activities on the Bruce Nuclear Site as really guiding us in this respect.

MEMBER MUECKE: Well, just my last follow up. If I look at the map, the distance to Port Elgin is approximately the same as to Kincardine. So in terms of proximity there seems to be no big difference between Kincardine and at least one of its neighbouring

municipalities.

MR. WLODARCZYK: Tom Wlodarczyk for the record.

We effectively treat all the communities within the local and regional study areas the same way. If an effect is likely or measureable, regardless of whether it falls within the local or regional study area, we identify it and assess it.

Throughout the technical support document, we actually highlight where we see effects occurring within Saugeen Shores or the Town of Port Elgin pretty regularly where there's similarities and where there are differences.

MEMBER MUECKE: Thank you.

THE CHAIRPERSON: We now have found the location of that number of employees citation. It's Section 7.4.1.2 of the EIS. So we would welcome further clarification.

Mr. Wlodarczyk, I have another follow up question on the study areas, and I would like to, as context, explain at the panellist to seeking further understanding because of the, of course, as you said earlier, the spatial context really sets you up to make sure you are addressing impacts that are measureable and likely.

So you just finished explaining that you would often, in the technical supporting document, highlight where there actually were other communities outside a local study area where there would be differences in nature and extent, I imagine, of the impacts. Are you confident that you meticulously covered all of those differences for each of your VECs as you worked your way through the logic in the TSD?

MR. WLODARCZYK: I would say yes, largely because the differences are pretty stark when they -- when you start going through the assessment through the methodology that was established. The three-step methodology, which we'll describe later as well, it really highlights of the need to do that. So, and in particular, the Saugeen Shores/Kincardine differences are highlighted, and we've also structured our public highlighted research tools to be able to highlight those differences as well.

THE CHAIRPERSON: Thank you. One final follow up. Would you feel as confident in determining differences between the local study area and the aboriginal communities?

MR. WLODARCZYK: I would -- Tom Wlodarczyk for the record.

The socioeconomic effects, at the level that we've been able to address them in terms of their

likelihood and measurability in the TSD, would apply equally to aboriginal communities. What's different in the aboriginal interests is that we take a more, a broader view of their interests to address some of the specific things that we've heard historically and from our consultations to date.

So the differences are of different perhaps types of effects and the different VECs that we look at them. So I believe that we look at the VECs that are appropriate for the aboriginal interests, I guess differently, we highlight those effects that are different from those VECs that would apply more to the non-aboriginal communities.

THE CHAIRPERSON: Thank you.

Dr. Archibald, Dr. Muecke, did you have any further?

Okay, thanks. Thank you very much. So we'll proceed with Part 2 of your presentation.

MS. BARKER: Diane Barker for the record.

OPG began engagement in 2002 after the Municipality of Kincardine approached OPG seeking to study the feasibility of options for long-term management of low and intermediate level waste at the western waste management facility at the Bruce Nuclear Site.

The initial engagement was associated with the Independent Assessment Study, which is provided on the

CEAA registry. The scope of the engagement activities and the stakeholders involved has changed as the proposal has progressed from feasibility study to project and now into the post submission phase.

Marie Wilson, Media Relations Manager with the Nuclear Waste Management Organization, and a long-term resident of the Village of Tiverton in the Municipality of Kincardine, will describe stakeholder engagement for the DGR project.

PART 2 - STAKEHOLDER ENGAGEMENT

MS. WILSON: Good morning, Marie Wilson for the record.

Stakeholder identification was significantly influenced by the project status, which determined the stakeholder study engagement area, and we'll discuss this in further detail in the next slide.

Additional factors considered in stakeholder identification included regulatory requirements, geographic areas with the potential to be affected by the DGR project. For example, during the early feasibility studies, engagement activities were focused on the Municipality of Kincardine as well as the four adjacent neighboring municipalities.

Members of the general public were identified as stakeholders and community leaders by nature of their need, influence, level of interest, were identified as key stakeholders. And members -- examples of key stakeholders would include the media, Canadian Nuclear Safety Commission and government officials, medical officer of health, municipal leaders and staff, provincial and federal elected representatives, and nuclear workers.

Stakeholder lists were discussed as part of the formation of annual communication plans, and that list grew as we progressed through the regulatory approval's process.

Slide number 15 illustrates the relationship between the project's status, the engagement area, and the growth of the stakeholder list. And I would note that our list does not include all stakeholders. There's -- all of the stakeholders are documented in the Environmental Impact Statement, but this list does demonstrate the substantial growth.

And you can see during the pre-project phase, we are engaging with the Municipality of Kincardine and four neighbouring municipalities, and after the submission of the project description and initiation of the Environmental Impact -- or, sorry, the initiation of

the environmental assessment following 2006, we are engaging with the local study area and that is broadened to include the regional study area as well as south Bruce Peninsula and northern Bruce Peninsula; so, essentially, all of Bruce County.

And you can see the substantial growth in the stakeholder list. We are now working with eight municipal councils and staff, five beach ratepayers associations, and we've gone from one to 11 Chambers of Commerce and business groups. We've gone from 6 service clubs to 34 service clubs and special interest groups. We're working with two local NGOs and eight national NGO groups.

Also, OPG sought to engage any individuals or communities from outside Bruce County who expressed an interest in the DGR Project, and you can see that during this time period we've added a number of Michigan stakeholders to the list because there was interest from Michigan.

Following the regulatory filing and to the present comment period, we continue to work with the stakeholders that we have listed as well as members of the general public, and you can see we've added a number of new local NGO groups as well as the mayor of Sarnia and The Great Lakes and St. Lawrence Cities Initiative which

has expressed an interest in engaging with the DGR project.

Slide number 16 provides a pictorial history of our stakeholder identification. You can see in the top photo, 2004. This is a ribbon-cutting for the opening of the Community Consultation Centre which was on Kincardine's main street and provided a venue for stakeholders to discuss both the DGR concept and the process which led to that concept.

What is significant about this photo is that you have participation from the Municipality of Kincardine and its four adjacent neighbours as well as Ontario Power Generation and the elected provincial and federal representatives. So engagement efforts have already started prior to the formal Environmental Assessment.

The photo in 2006 shows you a picture of our mobile exhibit and our van, which basically allowed us to take the DGR project to all of Bruce County, and there are a number of small municipalities so this was quite doable.

The 2007 photo shows a picture of an Owen Sound open house which illustrates our desire to engage with any communities or individuals outside the area who were interested in the project.

Slide number 17 provides context with respect to where the stakeholder input came from, which we are going to be discussing in the next three slides.

And from 2006 onwards there, we continued with our briefings and engagement activities with identified key stakeholders, but there was also a very concentrated effort to take the DGR project to members of the general public throughout Bruce County and to provide face-to-face opportunities where stakeholders could provide comment, ask questions, and raise any concerns that they had with the project which, hopefully, could be alleviated or we could provide them with additional resources.

And you can see from the increase in some of these outreach activities; for instance, the open houses, the speaking engagements. We provided 88 during this time period; 181 mobile exhibit events.

And I would note that many of these activities were advertised to maximize the number of people that attended them through local media, notifications through our communication materials, and in some instances, OPG sponsored special events to add value to increase the traffic.

To provide some perspective on the general overview of stakeholder input for the project, the

Municipality of Kincardine and the Bruce area, for the most part, are comfortable with nuclear facilities. The nuclear industry has been a key component of the fabric of the area since the '60s with the development of Douglas Point. And a Citizens for Bruce C new-build campaign in 2009 resulted in a petition of almost 10,000 signatures garnered mainly from within Bruce County.

It's an area which is accepting of nuclear facilities, and you see this acceptance in the very proactive manner in which the Municipality of Kincardine initiated discussions with OPG around long-term options for the safe management of low- and intermediate-level waste at the Bruce Nuclear site and in their active identification of the DGR concept moving forward and also in their willingness to be the host municipality as evidenced from the hosting agreement between Kincardine and OPG.

So during the 2003-2005 time period, Kincardine and neighbouring municipalities endorsed the DGR concept. And there was a provision in the hosting agreement which called for a community consultation exercise and residents were polled. This polling had a 71 percent participation rate and the majority of residents favoured moving forward with the DGR concept.

Following the environmental assessment from

2006 to the regulatory filing, we continue to hear very encouraging comments about moving forward with the DGR project, and the majority of the comments that we have heard throughout this time period are very favourable. There are small pockets of local individuals, local NGOs and national NGOs, who have expressed concerns about the DGR project and we'll discuss those in a few minutes.

Also, there's been interest expressed during this time period from Michigan stakeholders, particularly around the regulatory milestones, the scoping hearing and the comment period for the draft guidelines to the present.

Following the regulatory filing to the present point in time, we continue to hear encouraging comments to move forward with the project. Expressions of concern are more vocal. There have been a couple of new local NGO groups formed.

And an important development which is significant during this time period, the Nuclear Waste Management organization is implementing a siting process for adaptive phase management, Canada's long-term plan for used nuclear fuel. There are 21 communities which have volunteered to express an interest in the siting process; 3 of those are located in Saskatchewan, 18 in Ontario, and 5 Bruce municipalities have volunteered to learn more

about the siting process. And that increases the general profile of nuclear waste within Bruce County.

Also during this time period there's some evidence of consultation fatigue. This is from residents who are generally supportive of the project and they're making comments to the extent "Why is it taking so long? Haven't you already started construction?" So we're hearing a little bit of that.

With respect to the most frequently heard positive input, first and foremost, we need to provide a long-term, safe solution for the low- and intermediate-level waste on behalf of present and future generations. There's a sense that stakeholders do not want to leave this waste for future generations.

Stakeholders also want the safest option possible. And they take confidence from the knowledge that the DGR provides the highest margin of safety and reflects best international practice. There's also a sense that the Bruce Nuclear site is the right place for the proposed DGR project, much of the waste is already located there. You have the expertise. It's managed by capable and knowledgeable staff.

There's also an understanding that the proposed location has the necessary geologic attributes to safely isolate and contain the low-and intermediate-level

waste over the long term. This is gained from the work that was done around the independent assessment study and then with the submission of the Environmental Impact Statement, that strengthens that sense of confidence.

OPG also has managed waste on an interim basis at the Bruce nuclear site for a number of decades, and over that time period, they have earned the confidence and the trust of local stakeholders. There's a sense that OPG will take that safety culture and apply it to the operation of the DGR project.

There's also a sense that the regulatory approvals process will provide a thorough examination of all aspects of the DGR project and will provide opportunities for public participation and this also provides confidence. And there is an understanding that the DGR will provide socio-economic benefits in the form of additional employment and additional spending as well as it will provide additional recognition.

With respect to the most frequently heard concerns and the three dominant concerns that we have heard throughout the course of the project: the location at the Bruce Nuclear site is too close to Lake Huron, people have expressed concerns around the risk of contamination to groundwater and the Great Lakes from the DGR, also there's -- concerns have been expressed around

the potential of the DGR to manage used nuclear fuel or waste from other industries or countries.

During the last 18 months and especially, we saw this last summer, there's been a need to educate the public and really establish clarity between OPG's DGR for low and intermediate level waste and NWMO's adapt-the-phase management approach and this was particularly evident in the regional study area, the Saugeen Shores area, as well as Huron-Kinloss area.

More recently, there have been questions around the methodology used for the community polling that was conducted by the Municipality of Kincardine as well as how those results were tabulated.

There's been concern expressed about the DGR hosting agreement. Some stakeholders perceive it as being -- as buying support.

In the local study area, we've recently heard concerns about potential increases in dust and noise levels, effects on property values and also there are some that would like to see the -- the timing of the Property Value Protection Program -- sorry, would like to see that defined sooner rather than have it ready for the licensing.

There's also been discussion around the fact that Kincardine volunteered as a host municipality.

There was a lack of a siting process and the need for investigation of alternative sites for the DGR project.

An important part of engagement, of course, is addressing stakeholder concerns. And we continue to address those concerns and have been committing to a -- committed to addressing concerns as we've gone forward all through the process, sorry.

So with respect to the concern around the proximity of the DGR to Lake Huron; Lake Huron was included as a valued ecosystem component in the assessment. We've increased our briefings to beach associations; provided them with copies of the environmental impact statement summaries, newsletters, offered additional presentations as well as access to subject experts.

We continue to offer tours of the Western Waste Management Facility and the DGR site. In 2011, we published an additional communication product, The Lake Huron Report which specifically addresses some of those concerns that were expressed around the ability of the DGR to protect the Great Lakes.

With respect to the need to continue to educate, to distinguish between OPG's DGR and NWMO's APM process, you can see in this slide we have a picture of a table that was in our August 2012 newsletter. It

highlights the differences. We have a circulation of 35,000 for our newsletters, a distribution rate.

This went out to every resident within Bruce County, also those that are on the designated mailing list and we keep a couple thousand to distribute at our community outreach events. We also will continue to work in this area as we go forward.

With respect to engagement strategies going forward, we will continue at a very intense level to provide two-way opportunities for dialogue with our local communities and stakeholders and interested parties both within and without Bruce County. We will continue to use a multitude of communication tools and we will also continue to offer tours and briefings of this Western Waste Management Facility and the DGR site.

With respect to engagement strategies going forward with the site preparation and construction and operation phases, we'll continue to provide those very important opportunities for discussion with the public where they have opportunities to ask questions, provide comments. Some of those opportunities will focus on follow-up monitoring program and any undertakings from the regulatory approvals process.

We will also engage those living within close proximity of the Bruce Nuclear site regarding any

anticipated effects on the environment and health and safety of persons and advise them of upcoming events such as the beginning of blasting during construction or if there was going to be any large equipment on the roads during harvesting.

Thank you.

THE CHAIRPERSON: Thank you very much Miss Wilson.

We'll now continue with questions from the Panel and we'll begin with Dr. Muecke.

MEMBER MUECKE: Miss Wilson, can I -- I have a question. It's not on any of the slides, but in your -- in the submission that you presented on page 5, you mention the DGR community consultation advisory group and this is potentially an important vehicle for the flow -- to enhance the flow and -- of concerns and opportunities to -- from the Proponent to the stakeholders.

Could you provide us with some information on whether and how this consultation advisory group's activities influence the DGR planning process?

MS. WILSON: The DGR -- oh, sorry, Marie Wilson for the record.

The DGR community advisory group was established following the submission of the project

description in the beginning of the environmental assessment process. And this provided a forum for members of OPG and then, after 2009, OPG and NWMO as well as the mayors from the municipal councils and staff to discuss any emerging issues associated with Deep Geologic Repository project.

It provided a forum for updates on the development of the DGR project as well as the development of the regulatory approvals process and it allowed for any concerns to be raised by the eight mayors and the staff.

They provided input with respect to communication activities, groups that they thought we could engage with. And basically, it was a forum to keep the lines of communication open.

MEMBER MUECKE: So I understand it was -- their major input was in terms of communications products; am I right there?

MS. WILSON: Their major input was with respect to the identification of stakeholders that perhaps we hadn't already had on our list.

MEMBER MUECKE: What is the status of it at the present time and will it continue to operate?

MS. WILSON: Yes, it will. We are still meeting with the group. We meet two to three times a year and we will continue to meet with them throughout the

regulatory approvals process and my understanding is as we go forward.

MEMBER MUECKE: Thank you.

MEMBER ARCHIBALD: I'd like to follow up on Dr. Muecke's question. The community consultant -- consultation advisor groups are fairly common in terms of environmental assessment processes where they meet with Proponents to -- to get a flow of information and they basically, as you have shown in your engagement activities on the table, have a large list of stakeholder associations associated with it. In many cases the Proponents generally offer organizational and secretarial assistance with these meetings; is that not so?

MS. WILSON: Marie Wilson, for the record.
Yes.

MEMBER ARCHIBALD: Was this the case for the OPG activities with the community consultation advisory groups?

For instance, were the minutes of the meetings kept and recorded?

MS. WILSON: My understanding is that type of assistance was not provided to this group.

MEMBER ARCHIBALD: Was there any mechanism available through the -- through the meetings or the engagement activities for passing on information that may

not have been available to non-attendees, for example?

You have a very large subscription list of up to 35,000 people. This is a subset of those groups and not all people at all times can attend these meetings. Was there some mechanism or vehicle available for passing on information from such meetings to the groups that were not able to attend?

MS. WILSON: This advisory group was set up basically for discussions between the Proponent and the mayors and there wasn't any mechanism for submitting that information to the public.

MEMBER ARCHIBALD: Thank you

MEMBER MUECKE: If I may interject. I think part of the question was, even in that group not everybody could attend at all times. So how were they informed of what had transpired in previous sessions?

MS. WILSON: There were additional briefings provided to the Councils.

MEMBER MUECKE: So are you saying that anything that transpired during these meetings was regularly transmitted to all the councils?

MS. WILSON: Councils were kept updated with respect to the developments -- the key developments of the DGR project, but they would not have -- they were not notified of all of the activities that were discussed

at those meetings.

MEMBER MUECKE: Okay, thank you.

THE CHAIRPERSON: Ms. Wilson, so ---

MR. KING: Dr. Muecke?

THE CHAIRPERSON: Sorry. Yes?

MR. KING: Frank King, for the record.

Dr. Muecke, I think your specific question was if one of the members of the (inaudible), wasn't there on of a particular day, how did they get informed of what happened that day? And, I think as Ms. Wilson says, there were no Minutes taken, so it would be an informal process. If one of the Mayor's was not there that day, I don't think there was a formal process by which they formally advised. But, the mayors all sit on a community council. They see each other regularly, so I assumed there was more of an informal mechanism for that to happen.

MEMBER MUECKE: Okay, thank you.

THE CHAIRPERSON: So, Ms. Wilson, I have yet another question on this group. So, just to be completely clear, this is actually an advisory group about consultation itself, not broader topics where you would engage the Mayors with questions around the -- for example, the selection of the study areas as per providing input to the EIS process. This was really more

getting advice from the Mayors on who you should be consulting with.

MS. WILSON: Mary Wilson, for the record.

The input that we received from the Mayors basically revolved around additional stakeholders that we could identify, but there was a lot of -- there were a lot of presentations made at these meetings with respect to the DGR project, the technical aspects with respect to the regulatory approvals process. So there would have been comments back and forth around those types of presentations. But for the most part any input that we ever received from the Mayors was basically they were supportive of the project, they wanted to go forward with it, and it was around the identification of stakeholders. There were no issues expressed about any aspect of the project, except they just expressed their desire to support the process as it went forward.

THE CHAIRPERSON: Thank you.

We do have an appropriate slide on the screen as a back-up for my question. This slide, in addition to the list of activities on Slide 17, which was very extensive, points to the fact that most of OPG's methodology seems to rely heavily on, if not entirely, on passing information to stakeholders, getting their input in real time, as you've conducted that open house or have

a Q&A after a presentation. But the Panel was interested on whether you have plans to go beyond information out and input in, to other mechanisms for engagement that actually promote true participation and true consultation? By that we mean some way of transparently recording how did input received from your stakeholders may have influenced the way the project is progressing or is being designed? For example, on the slide here; engaging with those living in close proximity. Do you have plans for involving community members in a very real sense so that they are actually participating in the design of follow-up monitoring programs? So it's not as passive as it appears to be in your information so far.

MS. WILSON: Marie Wilson, for the record.

With respect to the input that we received from stakeholders, we listened to any concerns that were expressed and we had annual meetings for our formation of our annual communication plans, and we would take those concerns into account, and we would provide stakeholders with opportunities to, for instance, if they had concerns around the proximity of the DGR to Lake Huron, to speak with a subject expert; provide them additional briefings, tours of the Western Waste Management Facility, a tour through the core storage facility, and a more detailed geoscience investigation.

So there were mechanisms in place to address stakeholder concerns. Now, with respect to including them, for instance, in the follow-up monitoring plan, I would ask my co-worker, Diane Barker, if she would like to comment on that.

MS. BARKER: Diane Barker, for the record.

The EA follow-up monitoring program makes provision for annual reporting of the results of the EA follow-up monitoring program, and for revisions to that plan on an annual basis, addressing results of the monitoring plan, addressing feedback from the communities or members of the communities and groups. There is also provision for public attitude research, which will be done during the site preparation and construction phase of the project. And there's also, as part of the environmental management system, there's a process for tracking community complaints and feedback and identifying responses to those complaints and any feedback that comes in.

So the EA follow-up monitoring program does respond to input from the community and it does communicate out and respond to input from the community.

THE CHAIRPERSON: Just to make sure I understand; so the response to input is reflected in the monitoring program. You report annually, plus you have

an environmental management system that would make adjustments. How is all that made clear, though, to the original people who provided the input, apart from the annual report? Do you get back to the people who've raised these issues or made suggestions in any other way other than the annual report?

MS. BARKER: Diane Barker, for the record.

The DGR project, from its inception, has had a system of tracking enquiries that come in by telephone, by letter. They're all documented; the response is documented. There is a response to each individual who brings forward a question or a concern, whether it be a concern or just a request for information.

THE CHAIRPERSON: Thank you.

Dr. Archibald?

MEMBER ARCHIBALD: Just as a follow-up to Dr. Swanson's question; in order to inform stakeholders, in future, for example, you're describing a one-way flow of information from OPG through an expert knowledge base to the stakeholders. Are there any plans that would involve active community participation in future collection of, for example, environmental or socioeconomic data? And by this I mean through establishment of community monitoring committees that, again, active status in collection of that data.

MS BARKER: Diane Barker, for the record.

The Community Consultation Advisory Group, as Marie Wilson has said, will continue to operate throughout the process. There will be continued meetings with the public and engagement newsletters, that sort of activities.

The Environmental Monitoring Program is an ongoing process and subject to change based on feedback and results. So there is opportunity for possible changes to that process.

I'd ask Kevin Powers, OPG's Director of Nuclear Public Affairs if he'd like to provide further comments on that.

MR. POWERS: Kevin Powers, for the record.

At OPG our goal is openness and transparency. At our facilities in Pickering and Darlington we have an active and engaged Community Advisory Council. Since the inception of the councils we have worked with a two-way dialogue with these, as they have brought concerns to our attention and we have taken those concerns and used them to help our monitoring and information efforts.

MEMBER ARCHIBALD: Is there any way or fashion that members of these community groups are able to participate in data collection with you?

MR. POWERS: Sorry; could you just clarify how you mean participate in data collection?

MEMBER ARCHIBALD: For example, concerned neighbours who may worry about dust or noise, would they participate actively by siting collection devices or instrumentation at their homes and will they be able to access that information before passing it on to OPG, as a matter of reassurance, I imagine?

MR. POWERS: At OPG we do have various data collection devices throughout our host communities and that data is made public. Are you asking whether or not a member of the community could ask for a data collection device and have it at their home or reception locator?

MEMBER ARCHIBALD: I imagine that would be so.

MR. POWERS: Kevin Powers, for the record. That's something we would have to look at.

MEMBER ARCHIBALD: Thank you very much.

MEMBER MUECKE: Stakeholders change with time and throughout the project in its various phases. So could you tell me what the mechanism would be for adjusting stakeholder mapping to keep up to date and how this is reflected in the dissemination of information, including mail outs and telephone polls?

MS. WILSON: Marie Wilson, for the record.

Our engagement strategy was to identify as many stakeholders as we could within Bruce County, and we operated a very extensive engagement program with a lot of community outreach activities. We also used our website, briefings, media articles, advertorials. And the idea was to make sure that there was a high recognition value of the DGR project. So as new stakeholders became apparent, additional groups, we would add them to our stakeholder list.

MEMBER MUECKE: Maybe I didn't make myself completely clear. I'm talking about the future, because this project is going to run for decades. And so is there a formal mechanism of tracking stakeholders over that period of time and how is it reflected in dissemination? So I'm talking more the long-term period not up to the present.

MS. WILSON: Marie Wilson, for the record. We would continue to provide a high level of engagement. And with respect to any concerns that are expressed, we would continue with our tracking program.

MR. POWERS: Kevin Powers, for the record. Just to add to that, at our existing site facilities at Pickering and Darlington, we have community relations managers who are on site and working within the community. They develop relationships with active members

of the community as well as the community at large.

They are largely responsible for helping develop and maintain a database of stakeholders and they would be responsible for that sort of activity.

MEMBER MUECKE: Thank you. And by inference I assume the same mechanism will be in place?

MR. POWERS: Correct.

MEMBER ARCHIBALD: I'd like to ask a little bit about the community polls. Obviously you've had -- several have been held in the Municipality of Kincardine to reflect the community acceptance of the DGR project. Would you refresh me concerning the majority opinion in the Municipality of Kincardine; does this reflect a cross-section of stakeholders or represent only a majority of a subset of stakeholders in that community?

MS BARKER: Diane Barker, for the record.

Could I clarify, please, that you're asking about the telephone poll that the Municipality of Kincardine held in 2005?

MEMBER ARCHIBALD: That's correct.

MS BARKER: Thank you.

MR. KING: Frank King, for the record.

Dr. Archibald, could you just clarify that with respect to the 2005 poll, your specific question?

MEMBER ARCHIBALD: Let's take that question

a little bit further then. In your submission, your written submission, you had stated that the Council support at that time -- that majority of Council support was in favour of the hosting agreement and going forward with the DGR project. Can you give any information concerning the support level within Council that time; would it be required to be 100 percent or would it would be a majority opinion of Council, and was this level of Council support in subsequent terms after 2005 upheld at the same level?

MR. KING: I'll take a first go at that and then perhaps Diane Barker can add.

The poll in 2005, as I think you well know, is a Municipality of Kincardine poll. As part of the hosting agreement with OPG they were required to have a broader evaluation of community support and they chose to have that telephone poll and hired an outside consultant to perform the poll.

Then they brought that to Council and then Council supported the motion to move forward with the project. Then OPG, several months later, accepted that Council motion as sufficient statement of support to meet the requirement of the hosting agreement. Then OPG, in June of 2005, agreed to move forward with the project.

So the level of support in the Council -- I

must admit, I forget what the vote was in the Council that day. Maybe one of my colleagues can remember when the result of the poll was brought to the Council and a motion was made to move forward, but there was no requirement that OPG put on whether it needed to be eight out of 10, or majority plus one, or 50 plus one. I just don't know, but perhaps my colleagues might want to add something.

MS. WILSON: Marie Wilson, for the record.

Kincardine Council passed a motion accepting the results of the community polling and it was unanimous with the exception that one withdrew because of a conflict of interest.

MEMBER ARCHIBALD: And we have received a recent statement indicating continuing support by Municipality Council. Would that level of support be upheld at the same level or would you know if it's been decreasing with time?

MS. WILSON: The level of support by the Municipality of Kincardine is exactly the same level. They are all supportive.

MEMBER ARCHIBALD: Thank you very much.

THE CHAIRPERSON: Thank you. You noted in Slides 20 and 21 that recently efforts are being made to address the interests of the wider target audience, particularly south of the border, through efforts with the

Great Lake cities and St. Lawrence initiative.

In the submission, written submission on page 6, you describe your efforts as, "addressing the interests" of these groups.

Could you help us understand what that actually means? How are you addressing the interests of the wider target audience, particularly the groups that would involve stakeholders in Michigan?

MS. WILSON: With respect to stakeholder in Michigan, there's been -- interest has been expressed in the DGR project, particularly around the regulatory milestones and OPG has conducted briefings. There was a set of briefings in 2009; a set of briefings in 2011.

OPG met with elected representatives, staff of elected representatives, representatives from the Department of Environmental Quality as well as a number of NGO groups and the purpose was to disseminate information about the project and to engage them in discussion and determine whether there were any concerns.

THE CHAIRPERSON: Thank you.

The next question is related again to this slide 20, around frequently heard concerns, and again I quote from your written submission in support of this presentation, so,

"Opposition to the DGR project

existed, but it was expressed by a small number of individuals within Bruce county, Canadian NGO groups, and individuals in NGO groups from the State of Michigan."

Could you provide us with a greater understanding of how small is a "small" number?

MS. WILSON: Marie Wilson, for the record.

I conduct -- I'm in the community on a full-time basis through engagement activities for the project, and otherwise as a member of the community, and the number of stakeholders that we've engaged over since -- basically since the beginning of the environmental assessment process, the majority of that input has been very positive.

So when I say a "small" number, I would be -- it's hard -- it would be less than -- a lot less than the overall amount of input that we've heard. It's hard to quantify.

THE CHAIRPERSON: I understand that it's difficult when I ask for quantification of a number in real time, but perhaps let me follow up.

Do you actually keep records to sort of tally the level of support in the community, just to make sure that you can follow trends accurately and with

confidence?

MS. WILSON: We have -- Marie Wilson, for the record.

We have communication logs where we log all of our engagement activities and the dates, and key highlights of those activities, and we also tally the number of stakeholders that did attend those events.

THE CHAIRPERSON: Thank you.

I now am going to go to a question that doesn't really have a bullet on a slide to refer to.

So, again, it goes back to your written submission on page 22, where you refer to something called "field surveys of tourists and day users at local provincial parks and conservation areas."

This is of interest to us, and we were wondering where we might find the input that you received through those field surveys.

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

Those field surveys were tools used as part of the socio-economic assessment. The results are reported in the technical support document.

THE CHAIRPERSON: So if you could please provide us with the details of exactly where in the technical support document? That would be most

appreciated. Thank you.

MEMBER MUECKE: Just a brief question regarding slide number 17. You have -- you differentiate between engagements, like speaking engagements, which are -- I comprehend, and then you have "a lot of briefings."

Could you elaborate what constitutes a "briefing," so I have a common understanding with you?

MS. WILSON: Okay. Marie Wilson, for the record.

When I refer to speaking engagements, we are talking about formal presentations which we would have provided to service clubs, special interest groups. When I'm talking about briefings, we would refer to ongoing meetings with government officials, municipal leaders, medical officer of health, so that would be the distinction.

MEMBER MUECKE: So whenever I see "briefings," it means that it is an ongoing activity? That includes the beach associations ---

MS. WILSON: Yes.

MEMBER MUECKE: --- NGOs, et cetera?

MS. WILSON: Marie Wilson, for the record. That is correct. It would be more of an ongoing status update, not necessarily a PowerPoint presentation.

MEMBER MUECKE: Could it be verbal or would a written or a pamphlet constitute a briefing?

MS. WILSON: Depending on where we were in the regulatory approvals process, we might provide a verbal briefing based on a slide, it might just be a verbal briefing, or we might also be providing any new communication materials which we had. So it would be a status -- a status update.

MEMBER MUECKE: Thank you.

MEMBER ARCHIBALD: I'd like to bring your attention to slide number 15, where we're looking at engagement area and stakeholder activities in the early stages.

Could you highlight some or a range of the benefits that are available through the hosting agreement that was originally set up on 2005?

MS. WILSON: Marie Wilson, for the record. I'm sorry; could you please repeat the question?

MEMBER ARCHIBALD: Could you highlight some or a range of the benefits available through the hosting agreement?

MS BARKER: Diane Barker, for the record. The hosting agreement does make provision for community payments which would be an economic benefit

to the communities. It also includes provision for a centre of excellence as well as in future, it makes reference to an agreement to develop a property value protection plan.

MR. KING: Frank King, for the record.

I have the agreement in front of me. It speaks for itself, essentially, so -- but Diane has summarized some aspects of it.

If there was a particular aspect you were interested in, I could speak to it in more detail, if you want.

MEMBER ARCHIBALD: No, just a broad range will be fine, thank you.

MR. KING: Okay.

THE CHAIRPERSON: One particular item of interest to the Panel is around a provision of opportunities for the local suppliers and business people so that you could maximize the opportunities in the local and regional study area.

But we'll be getting into that in a lot more detail later on. So I think in the interests of time, and the fact that I think we all need a break, let's take a 15-minute break.

Thank you very much.

--- Upon recessing at 10:26 a.m.

La séance est suspendue à 10h26

--- Upon resuming at 10:42 a.m.

La séance est reprise à 10h42

THE CHAIRPERSON: Before we begin with the next presentation, I just wanted to make a note of the fact that in addition to anyone watching remotely through the video webcast, the CNSC website also has an audio only link to the proceedings today.

Thank you for coming back promptly. We are now going to proceed with Part 3 of this morning's proceedings on public attitude survey on telephone polling. And Mr. Wlodarczyk the floor is yours.

MS BARKER: Diane Barker, for the record.

I would ask the Chair's indulgence if we could respond to the two clarifications Dr. Muecke's and yours that were mentioned in -- earlier this morning.

THE CHAIRPERSON: Of course.

MS BARKER: Thank you.

With respect to Dr. Muecke's clarification request on traffic numbers, the reference to Section 7.4.1.2 is in relation to the effects of traffic on wildlife. More specifically it's used in assessing potential for vehicle collisions with wildlife.

We acknowledge that the wording may have been clearer. However, the intent was to reflect the number of vehicles -- the number of opportunities for vehicles to collide with wildlife and therefore those numbers do not reflect actual workers but reflect traffic associated with worker trips and may include deliveries, service vehicles and other traffic trips.

So that could have been better worded but that's the clarification.

MEMBER MUECKE: And my concern was not the trip -- number of trips, the 218. But it's preceded by the number of workers at the site for the project which is the 313. And I don't quite see how that connects with what you have said.

MS BARKER: Diane Barker, for the record.

The economic modelling for the project was based on 200 workers. That is the estimated number of workers. The -- I believe the 313 workers reflected there, as I said, is inappropriate wording. It should have reflected 313 vehicle trips as opposed to workers so it is an error.

MR. KING: Frank King, for the record as well.

That quote, that sentence, you referred to in that section is a number from the traffic study. And

the consultant who did the traffic study, which would have been done at an earlier period, assumed that number.

So for the purposes of his work -- that was a conservative number but it's not the definitive statement in the EIS about how many workers that there will be on site as part of the site preparation and construction crew.

MEMBER MUECKE: Thank you, Mr. King. And now I understand.

MS BARKER: Diane Barker, for the record.

I would ask Mr. Tom Wlodarczyk to provide the references to the tourist survey -- the park user survey information.

PART 3 - PUBLIC ATTITUDE SURVEY

& TELEPHONE POLLING

**Presented by Tomasz Wlodarczyk,
Senior Consultant, AECOM Canada Ltd.**

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The -- for some background, the park and the user survey was conducted, with again, to assist in a socio-economic assessment and establishing baseline conditions and in the prediction of effects.

The results are reported effectively throughout the technical support document but are largely concentrated in our discussion of social assets with respect to community recreational facilities and services, Baseline Section 5.7, Effects Section 8.6; with respect to the financial assets, particularly dealing with tourism, in Baseline Section 5.5 and Effects Section 8.4 and also in our physical assets discussions relating to community character in Sections 5.6 for Baseline and 8.5 for Effects.

The actual survey instrument is described in -- is provided in Attachment C4 and the general methodology for the survey is provided in Section 5.1.1.1 of our Technical Support document.

THE CHAIRPERSON: Thank you very much.

So I think we are now ready to proceed with the presentation on Part 3, Public Attitude Survey and Telephone Polling.

MS BARKER: Diane Barker, for the record.

In the context of the DGR Project both public attitude research and a telephone poll which we've discussed earlier this morning were completed.

OPG conducted public attitude research in 2003 in association with the independent assessment study of the feasibility of long-term waste management options

at the Western Waste Management Facility and again in 2009 in relation to the DGR Project.

The municipality of Kincardine, under the terms of the hosting agreement, completed community consultation in 2005. Kincardine chose to complete this consultation through what is referred to as the telephone poll. However mail out ballots were also provided to seasonal residents for that consultation.

Today's presentation is focused on the 2009 public attitude research and includes a comparison of the results of this public attitude research with those of public attitude research associated with other nuclear projects. Mr. Tomasz Wlodarczyk will make the presentation.

MR. WLODARCZYK: Thank you. Tom Wlodarczyk, for the record.

Public Attitude Research, and we refer to it as a P-A-R (PAR), is one of the best ways to understand public views on community issues in general.

PAR studies have been used extensively as part of socio-economic assessments of nuclear projects in Ontario. The reason for that is that they provide quantitative and reliable results and are a way to tap into what we informally call the silent majority.

The DGR PAR in 2009 was used as an

analytical tool, in the socio-economic assessment let's be clear, helped to establish existing conditions and predict effects largely through peoples changes in attitudes and behaviours. The public attitude research was not used to determine support of opposition to the DGR Project.

In the context of the socio-economic assessment, the objectives of this research was to identify people's attitudes towards and perceptions of their community, identify activities that residents undertake near OPG's Western Waste Management Facility and the Bruce Nuclear site as a whole.

We wanted to gauge people's awareness of the existing Western Waste Management facility, including how often they think about they live near this facility and the effect of its presence and their confidence in the technologies employed.

We wanted to examine the potential for changes in attitudes towards their community related to the DGR Project and likely effects of the project on people's daily lives.

In terms of methods, the study was conducted in accordance with what's known as the Marketing Research and Intelligence Association Standards developed in 2007. These standards are also consistent with guidelines for conducting such research for the Federal

Government.

It is a telephone interview process that is enabled by a computer assisted telephone interview platform or KT. This helps to minimize human error in data entry and ensure data accuracy, integrity and security.

Interviewers were fully trained and approximately 30 percent of interviews according with -- in accordance with the standards were interviewed -- of the interviews were monitored to provide quality control. Completed interviews were randomly selected for call back to confirm validity of results. The data is exported to a statistical package for social sciences of SPSS platform for analysis.

We believe the PAR results are reliable, largely that we've done these types of studies extensively before. ACOM and TELEPULSE who actually implemented the study are both firms with extensive experience with this type of research. The survey sample was random. It was selected to be representative of the general population. The sample size was large enough to ensure statistical valid findings. And throughout the assessment, we highlight where there is statistical differences between respondents and groups of respondents.

The sample size, we interviewed a total of

809 people, 401 of which were from the Municipality of Kincardine, our local study area. And 408 were from the surrounding municipalities within our regional study area. Using the statistical techniques of -- that apply to this type of research, the sample size for each study area produced a confidence interval of plus or minus 5 percent, 19 times out of 20, and for the overall sample of 809, reflects a confidence interval of 3.5 percent, 19 times out of 20.

What this means is that if you conducted the same research in the same way 20 times, 19 times out of those you would -- the results would fall within those confidence intervals.

There were questions regarding the use of the PAR and seasonal residents. The PAR focused on gathering data regarding public attitudes relevant to the socioeconomic assessment, and this was done in November 2009. The overall sample of 809 community members included 14 respondents interviewed at their seasonal home or cottage. We anticipated that there would be those and we wanted to identify the proportion of those that were included in our sample through a screening question.

Separating out responses of seasonal residents in the DGR PAR from those of year round residents would have no effect on the overall results or

the results related to the permanent residents given the small number. As a matter of fact, because of that small number there was no attempt to do so in the research report.

Other input opportunities for seasonal residents were provided. We mentioned -- we discussed the 2000 community poll that also reached out to seasonal residents, we tried to get through to the issues -- through at the issues that cottagers may have through both interviews with cottage rental agencies to look at some of the financial aspects. Unfortunately, only one rental agency participated. We -- as indicated, we conducted field surveys of tourists and day users at local provincial parks and conservation areas to gather information from people who might share the same interests, the same issues as seasonal residents as well as year round residents.

Five local ratepayer and property owner associations were provided with presentations and opportunity for input to the EA, and there was a strong web presence allowing any members of the public to be informed and share their views regarding the DGR project.

And just to note that whenever there was a communication or an event that was documented, that information was shared with the socioeconomic team for

their input into the analysis and to adjust questions or adjust the field surveys to reflect what we see as the emerging issues.

In terms of key findings, effectively, the PAR of 2009 indicates that nuclear issues are not top of mind among local study area or regional study area respondents. Rather, in the local study area, healthcare is a top of mind concern, while in the regional study area, economic issues or financial assets were top of mind concerns, here largely dealing with employment. Very few respondents, 2 percent, viewed nuclear waste as a threat to their community well-being. A clear majority of residents, respondents that is, in the local study area, in this case 90 percent, were confident in the management of radioactive waste at the western waste management facility and 83 percent indicated confidence in the proposed DGR project.

Respondents are generally satisfied with living in their community and are largely committed to staying there. The DGR project is also, through the public attitude research, is not expected to change peoples' levels of commitment to living in the area, particularly in the local study area, levels of satisfaction with living there, and their feelings of personal health and safety.

In response to the panel's requests, we -- the findings of the DGR PAR were recently compared with similar studies conducted near other nuclear sites in Ontario. And here we examined a 2009 study done for the Pickering Waste Management Facility Phase 2 Expansion Project, a tracking study which provides data from 2002 to 2012 related to the Port Hope Area Initiative, which includes not only issues in Port Hope but also in the Municipality of Clarington; and two public attitude research studies from 2008 and 2009 that were conducted in relation to the new nuclear at Darlington project in 2010 in the Municipality of Clarington.

Although each study is unique and geared towards the particular project or issues under concern, similar questions were asked or themes investigated across these studies which reflect the similar themes that are usually examined within socioeconomic studies. Overall, no major differences were noted in the responses to the three surveys for similar questions and themes.

Again, nuclear issues are not top of mind issues of concern across these studies. Again, issues related to healthcare and economy are consistently top of mind. We hear strongly that residents are proud of their communities and committed to living there and satisfaction with living there in these communities is consistently

high.

Community members generally do not think about the fact that they live near a nuclear facility on a day-to-day basis. People consistently expressed a strong sense of personal safety, and indicate that the presence of nuclear facilities or radioactive waste does not change this safety -- this sense of safety. New nuclear generating units, new or expanded waste storage facilities are also not likely to change most residents' attitudes.

But stepping back from the specific 2009 study, public attitudes do change over time and they vary from community to community, country to country. Public attitudes can be influenced by a number of things. In this case, when we're dealing with nuclear facilities, peoples' concerns over risk, trust in the proponent or trust in their opponents, trust in the regulator also have -- also influence peoples' attitudes.

Some people respond in various ways to nuclear events that are widely reported in the media and a lot of the opposition or support for project represents be either peoples' fears or their confidence in security and safety of the facilities that are in question.

Overall, public attitudes also vary depending on peoples' awareness and understanding of the relevant issues. In terms of what is -- what can affect

peoples' attitudes of whether a facility is acceptable or not varies certainly depending on the facility and the factors identified above. Sometimes they are broad in terms of their worldviews and views in terms of how power should be generated or should not be generated, how they might stand to benefit, how the community well-being might be affected, and again, the trustworthiness of the operator or regulators, and once again, and on the negative side, peoples' feelings or fears regarding safety and security or their confidence in technology.

The next two slides, in number 37 and 38, show some tracking studies overall which do not necessarily relate to the DGR project but are illustrative in nature of how public attitudes can change over time.

The first slide, on number 37, shows basically support or opposition in Canada and Ontario over a number of years. What -- I guess the salient point here is that although you can see they vary from year to year, there are consistencies within results across two different study areas, in this case, Ontario and Canada.

The next slide, in slide 38, are results from a similar type of question that was done in the United States. Once again, we can see that public attitudes can vary year to year, but overall they have -- there are either a consistency across study areas or

discernible trends over time. And these trends over time, as you can see, you know, take sometimes a very long time to emerge, and -- or sometimes they're very quick in response to a major event.

The two points to look at in this one is how public attitudes changed after Chernobyl and after the Fukushima event, which saw drops in public support for nuclear power in the United States in both instances. In some cases, more dramatic than others.

We also note that there are two bars; one is the blue at the very top and a yellow kind of bar at the very bottom reflecting studies from 2005 onwards. These two bars are actual results from nuclear host municipalities which also shows that typically, support in nuclear communities, if I can call them that, are generally stronger than in the general populace in the United States here, in particular, and researchers tend to attribute this to a greater understanding and awareness of the issues as indicated before and also certainly the relationship these communities have in terms of community well-being and financial benefits associated with soundly operating -- safely operating facilities in their midst.

Thank you.

THE CHAIRPERSON: Thank you very much. I will now open the floor for questions from the panel

beginning with Dr. Muecke.

MEMBER MUECKE: Yes, the shores of Lake Huron in Bruce County are our favoured holiday destinations and known as being a cottage country, even to a Nova Scotian, and so my question is why was the public attitude survey conducted in November?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The public attitude research is considered one tool that we use to assess effects, not the single tool. It was conducted in November probably simply due to scheduling requirements for conducting studies in general and completing deliverables. That's the honest answer.

What the -- for the benefit of an effects assessment, we look at the results of public attitude research, other field surveys and certainly the results of other assessment analyzes; air, noise, dust, et cetera, to draw our conclusions with respect to whether there are likely to be effects in a particular geographic region, a particular community whether it's a seasonal residence community of the Lake Huron or the community of Port Elgin in general.

Throughout the public attitude research work, we are assessing effects on community well-being, so we look at effects at that level and do not necessarily

drill down into particular segments unless we have the data to do so.

MEMBER MUECKE: Thank you.

Isn't that the whole problem have the data to do so? Would they -- do you think your results would have differed if you had chosen a different time of year like August?

MR. WLODARCZYK: I would believe that the results would be perhaps more inclusive. I believe the statistical process that is applied to such research at a community level remains valid and reliable for the data that -- for the results that we do have.

And once again, for the purpose of effects assessment, we would have to rely on a number of tools in the -- to draw our conclusions.

MEMBER MUECKE: But just to follow this up a little bit, what is the percentage of seasonal residents versus the total population; the permanent or the residents in the local and regional study areas? Do you have any idea?

MS BARKER: Diane Barker, for the record.

When Kincardine conducted their poll, they identified a number of seasonal residents who received mail ballots. I don't have the exact number, but we can provide that information, the number of mail-out ballots

versus the number of year-round residents as Kincardine distinguished it for their poll.

MEMBER MUECKE: Could you find the same information for Saugeen Shores?

MS BARKER: Diane Barker, for the record. We do not have that information. As I said, it was Kincardine who provided the additional information.

MS BARKER: Diane Barker, for the record. We can seek to obtain that information from the Saugeen Shores council. We don't have it at hand.

MEMBER MUECKE: That would be really helpful, thank you.

THE CHAIRPERSON: So if I could identify that as an undertaking, Number 1, to provide the panel with the proportion of seasonal versus permanent residents in the local and regional study area with the emphasis on Saugeen Shores, but also any other information for your regional study area would be most helpful, thank you.

Dr. Archibald?

MEMBER ARCHIBALD: Regarding the power survey, I'm going to be seeking clarification on the -- of the process through several questions, so if you don't mind keeping pace somehow.

My first one concerns the call backs on the

survey respondents. This is on your slide deck 29 on page 34 of your written response. For the 15 percent of respondents that were randomly called back to confirm validity of responses, how would the validity between these responses been assessed and what measures of repeatability were demonstrated between the intervals of contact?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The call backs, themselves, were done to identify outliers, so the question -- not the full public attitude research certainly was not repeated; selected questions were and then when -- if we noticed that there was a marked difference in those responses, the -- that survey was not included in the sample and the sampling continued for two others. That's probably part 1. Can you ask -- repeat number 2?

MEMBER ARCHIBALD: What measure of repeatability was demonstrated between intervals of contact? By this I basically mean were responses duplicated between calls or did they differ greatly, for one, and the reason being were the same persons contacted in each instance or were -- could they have been different people from the same household that were contacted?

MR. WLODARCZYK: Tom Wlodarczyk, for the

record.

It was always the same individual because the call backs were being -- the call backs would happen shortly after the completion of the survey and invariably, the results were rather consistent across the responses.

MEMBER ARCHIBALD: Thank you very much.

My second question comes from your slide deck 29 also and on page 33 where the protocols and procedures of the power process were described. And one item here is that you define in this section protocols and procedures the Public Works and Government Services Canada guidelines, the PWGSC standards, which you did not use for this and the second standard was the -- let's see here -- the marketing research and Intelligence Association guidelines. On page 33 at the bottom, you mentioned that the standards provide guidance on proposal preparation -- this would be the government standards -- and list a series of these at the bottom.

"In series such as the one conducted for the DGR, these standards are not applicable."

So you used one method -- methodology or guidelines. You stated the standards that are used in another form of guideline procedure, but they were not used. And my question comes up in the -- in this

instance. What is the definition of the survey respondents under the listing of the PWGSC protocol? Does this infer individual respondents or one household or accumulated response per multi-resident household? And is this survey feature standard between the two guideline systems that were used or mentioned?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The Public Works and Government Services' guidelines apply to work being undertaken for the federal government which in this case, the work was being done for Ontario Power Generation, so the firm that was implementing the survey, IntelliPulse, subscribes to the other standard and by a comparison, they are largely consistent.

In terms of the definitions of respondents, I do not have that particular -- those particular definitions at my fingertips. We would have to go back and speak to IntelliPulse which has the technical coordinator for this type of work.

MEMBER ARCHIBALD: So, my specific question was: in the actual survey, is it known to you or to anybody in the system other than the people who ran the survey whether this was a single-household response or would this be an individual in a household response which,

relating back to by previous question, could change between callbacks?

MR. WLODARCZYK: These would be individual responses reflecting the views of that individual. Sometimes, they might speak for themselves or for their households; other times, you know, it's whether they would like to share with us, frankly. And, as I mentioned before, the call backs were to the individual who immediately completed the survey previously.

MEMBER ARCHIBALD: So, therefore, in the survey of the 809 respondents, those would be 809 separate individuals?

MR. WLODARCZYK: Correct.

MEMBER ARCHIBALD: And it would be possible, therefore, if a household had many individual members that you would have a multitude of responses, either the same or different?

MR. WLODARCZYK: The manner in which the public attitude research studies are done is to ensuring that the sampling is representative of the population settlers in a whole to provide statistically reliable sound results across the sample.

MEMBER ARCHIBALD: Thank you. That's valid.

My third question, it's stated on page 36

and not on one of your slide decks that "following response rates can be counted using data waiting" -- and this is in quotes -- "using data waiting -- in quotes -- to match the demographic profile of the population."

Could you provide an explanation why your methodology was most valid and least biased and explain what the waiting processes are and how they match the demographic profile?

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

Once again, the reliability of the surveys is grounded in the adherence to the standards and protocols mentioned. The waiting is largely in response to the population distributions across the various sub-communities within the study area.

So, for example, they don't necessarily await towards demographic, let's say age or the sex of the respondents although the Public Attitude Research quotas would like to have both, a 50-50 both male and female, and we report on the statistical -- difference in statistical significance amongst the demographic age groups or between male and female respondents.

And that is how we achieve greater information for the Effects Assessment but also how we try to achieve greater reliability in confidence and results.

MEMBER ARCHIBALD: On the same page, it is also stated, and this is in quotes: "A mail out or field survey for a PAR would likely not have produced the most reliable data or the same volume of responses as were received for the DGR Project."

Could you explain to me, please, why a mail out or field survey would not have produced reliable data in this instance?

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

The nature of the socio-economic PAR is such that, frankly, it can be a little boring in terms of respondents. When there is a salient issue of concern that is well-known in the community -- advertised, for example --, the response rates certainly would be higher for a mail out type of survey. In this instance, we chose a Public Attitude Research via telephone polls to a) get statistically valid results quickly and representative of the general communities that are in our study areas.

MEMBER ARCHIBALD: Okay. Thank you.

MEMBER MUECKE: In any public attitude survey, the familiarity of the respondents with a particular subject matter as in the case of DGR is of importance and will influence the response.

How did your survey methods account for the

varying levels of awareness and knowledge of the subject and issues related to the project?

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

I believe the Public Attitude Research survey instrument includes specific questions related to their awareness of the actual project and OPG's effort to communicate and consult with the community. It also includes preambles to the various questions sets that set out factual information regarding the project to set the context for the subsequent questions.

MEMBER MUECKE: So, the interview starts with a preamble that outlines the project, as I understand?

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

The methodology that we applied is typically -- and we've done this in other studies as well -- is the survey purpose and the sponsor of the research is not revealed for key baseline questions. In this case, the key baseline questions related to people satisfaction with their community, the key issues, "top of mind" issues, and these were largely open-ended questions that allowed, you know, numerous types of results that were not necessarily set in the context of the DGR Project.

Towards the, I guess, the middle of the questionnaire, the notion of the DGR Project is introduced with, as I mentioned, a factual kind of preamble to questions that talk about -- that we seek information on people's awareness of the project, the confidence in technology used at the Western Waste Management facility, their, perhaps, their attitudes and potential changes in their attitudes and behaviours in relationship to the project, once that information is there.

And then we complete the surveys with general questions relating to demographic characteristics that would allow us to do cross-tabulations in significance tests.

MEMBER MUECKE: Thank you.

THE CHAIRMAN: So, I have some questions related to slide 31. If we can bring that slide up, please.

So, on this slide, the final bullet states that separating out the responses of seasonal residents would have had no effect on the overall results. The Panel understands that this is because of the small sample size of the seasonal residents in the first place. Are we correct in that assumption?

MR. WLODARCZYK: Yes, that is correct.

THE CHAIRMAN: Okay. So, I have a number

of follow-up questions.

So, in response to that, if we can go to slide 32, you explained that you recognized you had a low sample size and you have other information sources to represent the seasonal users. How did the input from these other input opportunities provide adequate information to you in order to -- in quote -- "make up" -- unquote -- for the low sample size in your Public Attitude Research?

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

I don't believe there was an intent to make up anything in terms of too little sample size in the Public Attitude Research for seasonal residents.

What the purposes of the other activities were is to look at, once again, where people live, work, play, and to look at interests kind of regardless of who the individuals affiliate themselves with, given their approach of looking at community well-being at a community level and, in this case, the host municipalities and the surrounding municipalities in their study areas.

So, we went to the parks and beaches and the trails of the -- in their local and regional study areas that might be used by both permanent residents and seasonal residents to examine how they used those

facilities and enjoyed them and how they see the effects of the DGR Project on those uses and activities.

In those surveys which are lined up in the sections that I have provided, we did not separate out the -- we did not say whether they were seasonal or non-seasonal, but we do find out where they live and, through their people that were using those facilities and conducting activities in the area, both from within Kincardine, our regional study area, and beyond.

THE CHAIRPERSON: So to follow up; are you satisfied that you have an adequate and reliable representation of seasonal users with respect to potential evaluation -- effects of potential impacts?

MR. WLODARCZYK: As I mentioned previously -- Tomasz Wlodarczyk, for the record.

In conducting impact assessment and social impact assessment, we rely on a number of tools and inputs, too, and what I can say, we're confident the conclusions regarding the effects of the projects on the various valued eco-system components that we do have.

And sometimes the confidence comes from the statistical availability of the public attitude research. Other times it comes from the confidence we have in the modelling of air and noise. Other times, we have -- confidence comes from case studies and where effects have

or have not occurred in other places in similar circumstances. We call this a process of triangulation; we try to look at the effects in various ways, from various sources.

To conclude, I think -- I'm confident in the conclusions of the assessment.

THE CHAIRPERSON: Thank you.

This is more of a general methodological question, on your public attitude research.

Why did you use random selection rather than stratified random selection? The stratified random may have insured adequate representatives of important subpopulations such as seasonal users.

MR. WLODARCZYK: The random sample approach was selected to be consistent with methodologies used in previous public attitude research studies near the Bruce site. We made the attempt to screen for seasonal residents, as a major subpopulation. And that was our way of trying to get at that, along with the other tools and techniques we applied in the social impact assessment.

THE CHAIRPERSON: So to ensure complete clarity, the primary reason was you wanted to have consistent results with previous surveys?

MR. WLODARCZYK: That was -- I would say that's one of the reasons. The other reason was that it

was -- it's a technique that we're familiar with and we did not at the time feel that an analysis of community well-being as a whole, the level of social analysis that we were, I guess, aiming at, that the other approach would necessarily be that useful.

THE CHAIRPERSON: Okay.

So, again, in the interests of clarity, I would like to paraphrase your answer to make sure that the Panel understands.

So at the level of resolution of your analysis, you believe that the random sampling was sufficient for your purpose? In other words, it wasn't a finer -- you didn't need a finer resolution?

MR. WLODARCZYK: Yes, at the time that the survey was designed, that was our approach.

Thank you.

THE CHAIRPERSON: A couple of other questions in follow up to Dr. Archibald's queries on your call-back, and you mentioned you were looking for outliers.

Could you please explain to the Panel how you identified an outlier? In other words, how "out" did it have to "lie?"

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

Typically, we start out with some of the demographic questions which are pretty simple, factual questions. Certainly if those questions indicated an opposite answer, or -- we would check to see if it was coded wrong, and that was an obvious outlier.

In other places, the nature of the response, we would focus in -- rather not on the open-ended questions, but on the closed-ended questions, which would also be able to see whether their views suddenly changed. And that's how the test was typically applied.

THE CHAIRPERSON: Thank you.

You also explained to Dr. Archibald that the results were rather consistent between the original call and the call-back.

Could you expand on what the acceptable deviation was between the original call and the call-back?

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

Given the -- my previous answer, in terms that we were focusing on some very simple ones, that it was to be very clear, the acceptability was either yes or no.

THE CHAIRPERSON: Thank you.

I have another question and this is related more to a statement in the written submission, on page 22,

where,

"Five agencies were contacted for participation and one interview was completed in 2009. Overall, the results of the interview indicated that the presence of the Bruce nuclear site had a strong, positive effect on off-season cottage rentals, and business had improved in years prior to the interview."

You go on to say later on in the same quote,

"When asked about the DGR, it was felt by representatives of cottage rental agencies that the project would have the potential to increase cottage rentals, possibly due to the increased number of workers at the Bruce nuclear site."

The Panel notes that the one interviewee has now become plural, in "representatives," in this above quote. Please explain?

MR. WLODARCZYK: The Panel is correct; there was one interview conducted.

THE CHAIRPERSON: Thank you.

Dr. Archibald? Dr. Muecke? Do you have any follow-up questions?

MEMBER MUECKE: I come back to the knowledge base of the respondents. And perhaps after lunch you could -- could you provide me with the prime -- what you would consider the prime examples of how you tested the knowledge base of the respondents by quoting me a few of -- by quoting the questions?

MR. WLODARCZYK: I will -- we will dig into the materials and report back.

MEMBER MUECKE: Thank you.

THE CHAIRPERSON: Thank you.

I understand that you will be able to respond this afternoon rather than a formal undertaking?

Thank you very much.

Okay, I believe we're ready to proceed with Part 4 on Criteria for Significance Levels for Socio-Economic Effects. Mr. Wlodarczyk, I believe you are once again on the hot seat here.

PART 4 - CRITERIA FOR SIGNIFICANCE

LEVELS FOR SOCIO-ECONOMIC EFFECTS

Presented by Tomasz Wlodarczyk,

Senior Consultant, AECOM Canada Ltd.

MR. WŁODARCZYK: Tomasz Włodarczyk, for the record. It's a pleasure to be here.

There was a question from the Panel regarding the precautionary approach to the socio-economical assessment, and in keeping with the overall philosophy of the environmental assessment, the socio-economic component was done in a precautionary manner, largely through the screening process that was developed for all disciplines.

This was a three-step screening and analytical process that attempted to be inclusive of a wide range of potential effects to consider whether those potential effects are likely to be measureable and adverse. And any that were considered to be potentially adverse and measureable were carried forward in the procedural manner for more detailed assessment, either through more detailed modelling of noise or -- or what have you, or through more detailed analysis of economic factors or through consideration of more field survey and PAR results.

Just in general, the assessment relied on government data sets that's typically generated, Statistics Canada, by the municipalities themselves, the province, and the full range of models were considered to be applied transparently and using robust models. And

previous information requests and our responses go into the confidence and reliability of those models.

In terms of the assessment of significance, the adverse effect that remained after the consideration of mitigation, and here we consider mitigation to be not just the project design elements that work towards minimizing effects in general, but any additional mitigations that might be considered necessary.

The residual adverse effects were classified and evaluated for their significance using the following criteria. These are magnitude, duration, frequency, irreversibility and the geographic extent.

These are, if I could say, that these are pretty commonly used significance criteria that are applied in environmental assessments in Canada and internationally.

With respect to the measurable changes, all direct interactions between the DGR project and the VECs, in this case the socioeconomic VECs, were considered to result in a measurable change. So we're taking that caution.

Uncertainty was managed by considering all direct interactions that are measurable and that we didn't say that something is more significant than other, so we carried forward anything that was likely again to be

measurable through to more detailed assessment.

In this case only one residual adverse effect was identified, and this was the decreased enjoyment of property due to increased noise levels near Baie du Doré during the site preparation, construction and to add the decommissioning phase as well.

Looking at the study area maps, this area is confined to the local study area immediately adjacent to the Bruce nuclear site, and with the application of the criteria, it was not deemed to be significant.

That assessment of significance, once again, was used by applying the effects criteria that were common across the disciplines in the EA, and a qualitative rating system of low, medium and high, which was developed specifically for the residual adverse effect under consideration.

Next slide please. To apply that rating system to the residual adverse effect, the magnitude criteria was rated as low, largely because the increases in outdoor noise levels would only be noticeable -- that is there is around of five decibel level change and that is considered noticeable -- and that indoor noise levels are likely to be indistinguishable from outdoor noise levels -- something there -- that indoor noise levels are likely to be indistinguishable from existing indoor noise

levels. In other words, the effect would not likely be noticeable within peoples' homes, effectively.

The geographic extent criterion was also rated as low, once again because of the small geographic area within which that noise would be noticeable and that which peoples use and enjoyment of the property might be affected.

Timing and duration was rated as low because the changes in noise levels would not be noticeable during 40 years of operation but restricted to the construction and decommissioning phases.

Together with the frequency criterion, which is rated as medium, that noticeability of the noise level would occur only 25 percent of the time, and once again primarily during late at night when outdoor activities and the use of property for, let's say, barbequing or other social gatherings, would not be likely.

In examining the degree of irreversibility, the noise levels will certainly return back to normal levels or whatever the ambient is at the time. And we reflected that as medium largely because if people do decide to change their use and enjoyment of property, they may not suddenly go out and do things that they haven't done for the past couple months.

People tend to use outdoor areas less frequently at night. Seasonal residents also do not use their properties continuously. Some do, absolutely. You know, there are lots of single properties with plowed driveways and people come in the summer and the winter to enjoy the amenities, but overall the effects were not considered to be significant given these criteria's as a whole.

We were asked to respond on how sustainability considerations were used in classifying socioeconomic facts. Speaking from my own experience, as conducting socioeconomic impacts for a number of years and a number of projects, sustainability considerations do not lend themselves readily to incorporating into the types of measures that are used in this type of analysis for significance; that is magnitude, duration, geographic extents, frequency, et cetera.

So the sustainability thinking at the time was guided to the socioeconomic effects in general, was kind of rooted in our examination of existing environmental conditions and our application of the community well-being framework.

We did not rely solely on regulatory standards to make those determinations, but once again we relied on responses from our field studies, our public

aptitude research, results from our consultation and engagement activities that were available to us at the time to get a sense, frankly, of what does this mean in terms of community well-being, and that's kind of our approach to the sustainability aspects of the project.

Effectively, we wanted to figure out does the project make a positive contribution to community well-being or might it serve to diminish it and at the level of resolution, as you mentioned, of community.

Thank you.

THE CHAIRPERSON: Thank you very much. In this case, I'm going to start off with the questioning. So if we could please bring up Slide 43. Thank you. So these are the general assessment criteria. And then in a minute I'll ask to move to Slide 44.

So again quoting from the written submission:

"In the case of the one residual effect identified in the assessment, i.e. enjoyment of personal property, the significance ratings for the magnitude criterion were appropriate to the scale of effect and its contribution to overall community well-being, which is the fundamental

basis for the socioeconomic assessment."

So our question is how are the magnitude criteria listed in this slide and then again in Slide 44 specific to -- if we could go to Slide 44 please -- appropriate to the scale of effect? Are you referring to the spatial scale of noise impacts, or the degree of difference from baseline, or a combination? In other words, how does the magnitude rating in Slide 43 translate to the magnitude of noise impact on Slide 44? We're kind of having a hard time following the connection there.

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The magnitude ratings of low, medium, high on Slide 43 effectively is a two-pronged kind of rating where the effect on a community asset, in this case use of personal property or private property, deems to be evident. And that you can see is evident or clearly evident -- the ratings are qualitative.

And in this case the cause or the source -- the indirect source of the effect on peoples' enjoyment of property is noise, which is the pathway. In this case, the noise is considered noticeable, okay, in relation to baseline conditions and that related to, I guess, the first sentence in the low rating, the effect on community

asset is evident only as compared to existing conditions.

And then, given the number of property that might be affected -- and here we were talking about four households, or residential locations, near one of our measured receptor points, is that that was deemed not to be of sufficient magnitude to reflect an effect at a community level, and that's why that rating is considered low.

THE CHAIRPERSON: Thank you.

My next question is related back to Slide 43, so if we can bring that up again? So now we're on to the other effects criteria, the geographic extent, timing and duration, et cetera. On page 37 of your written submission, you state -- quote:

"Common definitions of timing and duration, frequency, and degree of irreversibility were used for all disciplines."

The Panel would like a further understanding of why common definitions are appropriate across all disciplines, in particular given the socioeconomic being quite distinct from some of the other natural science disciplines. Given the different VECs, the different sensitivities of the VECs, the different ranges of severity of potential effect depending upon the

particular stress or VEC combination, and most notably in this case, the varying ability to define or describe impacts in quantitative terms.

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

Well, the general rating criteria and certainly the -- sorry, the effects criteria were common, simply to bring consistency to the approach in general. So the magnitude, the geographics, and timing were considered to be appropriate to be applied across all disciplines. The rating criteria -- there's low, medium and high -- for many of the disciplines were -- and I don't want to speak for others, but were common as a starting point.

As you can see in this case, we tried to apply the community wellbeing approach, largely to the magnitude of the effect, and we considered, I guess, the general rating scheme to be reflective of the -- to be applied appropriately to the one residual effect that we did have.

If I could hazard to hypothesize, if there were other effects that were notable we would have probably adjusted the rating criteria to suit those as well. But in this case we didn't feel that was necessary.

THE CHAIRPERSON: Thank you.

So I'd like to follow up on that, and the next series, number three in my question is kind of leading us down the path of your screening steps and the logic you're using.

So the Panel's understanding is you had the three-step screening process and that most, if not all, effects were considered measureable. So they went to step two, which was where you determined whether they were adverse; therefore, the process leading to the definition of adverse is really pivotal.

We understand from reading the EIS, and also your submission, that this step relied primarily on professional judgment, assisted of course, by some tools such as public attitude research; and the professional judgment is described in narratives in the EIS and the TSD explaining the professional judgment, leading to the judgment that it's not adverse.

Given the pivotal role of professional judgment, how confident are you that screening of potential effects, such that they were defined as not adverse, is defensible, credible, and repeatable?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The screening steps and the rationale for whether something is screened in or out is clearly

summarized in a series of tables that I would think anybody can go and apply their own judgment; which is the goal, is that somebody else could go in and look at the information presented and kind of reach the same conclusion as the assessor, and we believe we've done that in a very open and transparent way that's clearly documented.

In terms of the determining whether something is adverse or not, some of the -- well, sometimes it's painfully obvious what's adverse or not. In other cases it may not be as clear and so, for example, population changes, there are different views of those and we try to explain in our assessment, detailed assessment, what those views are and how they might influence community wellbeing conclusions, based on the tools that we did have and had. I believe that it's clear, transparent, and replicable.

THE CHAIRPERSON: So to paraphrase, because of the thoroughness of the documentation of your logic, and the transparency with which you present that logic, you feel that it would stand up to the criterion of defensible, credible, and repeatable.

MR. WLODARCZYK: Yes.

THE CHAIRPERSON: Thank you.

I have another question. Again, it's more

to do with a quotation from the written submission. Begin quote:

"In other cases, particularly for indirect socioeconomic effects, reliance was placed on whether an effect would be noticeable or observable at the community level. This considered whether the type and nature of the effect was of sufficient magnitude to alter an asset of the host municipality and/or region that is fundamental to maintaining a community's wellbeing. This was considered appropriate given that community wellbeing was the basis for this socioeconomic assessment."

End of quote; appearing on page 40 of the submission.

My question is, given the complex nature of community wellbeing and the multiple interactions among stressors and community assets, how confident are you that the VEC by VEC analysis of the potential for residual adverse effects does not underestimate the potential for change from multiple stressors collectively on community wellbeing?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

If I could summarize, we have a number of slides dealing with cumulative effects later on that speaks to the various approaches we take to address those types of methodological issues. In general, what we've attempted to do is follow the methodology outlined for all of the disciplines; for consistency that is pretty well accepted, you know, in the A circles. And then use community wellbeing as a lens by which to view those effects, both individually and collectively.

Collectively, we looked at, through our public active research, through the results of our engagement activities, and other tools, on what people thought were the major threats to their community wellbeing, and what people thought would help maintain or enhance their wellbeing.

Looking at those responses, we were able to make, I guess, a determination as to how well the residual adverse effects and the potential positive effects matched or supported or detracted from those, I guess, desired outcomes of common community members.

THE CHAIRPERSON: Thank you.

Dr. Muecke?

MEMBER MUECKE: Yes, my question, basically,

is to clarify something you -- in your reply to Dr. Swanson previously, and I just want to get clear in my head.

Given the very personal nature or level of impact of noise on the enjoyment of private property, could you provide further justification for the conclusion that noise will not result in significant adverse impact? Is there an assumption here that some noise impacts, while inevitable, are insufficient magnitude, duration, frequency, or extent, to be significant to individual persons living near the DGR site?

MS BARKER: Dianne Barker, for the record.

Dr. Muecke, we have a session on noise later this afternoon and I think, perhaps, there'll be additional information on how noise effects were assessed. Could we ask that you defer that question until this afternoon?

I can, but it seems ---

MR. WLODARCZYK: If could add -- if I can add a point, sorry. Tom Wlodarczyk for the record.

If I can just maybe perhaps elaborate from my perspective. Yes, at an individual level people respond differently to noise and that when asked one individual regarding the significance of effects, particularly when they are affected at a very individual

personal household level, that conclusion may differ from a conclusion that was based of an assessment at a community level.

So I guess the answer is if we would assess effects on every individual, we would have a multitude of responses that would be very personalized, and that's why the -- kind of the unit of analysis that we went forward with was community and community well-being issues.

MEMBER MUECKE: Okay, so I understand that from a previous reply you phrased in a -- in the same manner, that you're looking at it from a community perspective. In the previous answer to Dr. Swanson, you mentioned that there are basically only four households that would be directly affected, and therefore, from a community perspective you don't consider that an effect that is worth further attention. So the logical question, to me anyway, that arises is how many households would it take to designate this as a community effect?

MR. WLODARCZYK: Tom Wlodarczyk for the record.

Good question. There are no thresholds that are published in this regard, so I can't give you a number. Similar to the question asked previously regarding support or opposition. What it -- what we tend to look at is the criteria holistically, as a whole, in

saying if we, for example, conducted public attitude research, okay, as follow up during the construction phase, which is planned, that noise or dust and the use in general of property issues would be greater top of mind than currently, and we would look for perhaps the statistical differences between results in our baseline and results when the follow up was studied, and a determination could be made then.

So in some instances it may be 20, it may be 100, I would not want to speculate, but given the population, the distribution of population near the Bruce Nuclear Site, an effect that looks at four households was definitely considered to be doubtful that it would be reflective or would emerge as a top of mind issue across the community.

MEMBER MUECKE: Thank you.

THE CHAIRPERSON: Thank you very much, and as was pointed out, we will be addressing noise issues in more detail later today.

It just so happens that we have reached lunchtime, perfect timing. So if we could all be back promptly at 1:00 and I'll resume the session. Thank you very much.

--- Upon recessing at 11:57 a.m.

La séance est suspendue à 11h57

--- Upon resuming at 12:59 p.m.

La séance est reprise à 12h59

THE CHAIRPERSON: Good afternoon everyone, and welcome back to the technical information session on socioeconomics.

We are now ready to proceed with Part 5 on the economics model, and Mr. Kier, I believe, is the presenter. Please proceed.

MS. BARKER: Diane Barker for the record.

At this time, we'd like to take the opportunity, if you would indulge us, to have Mr. Wlodarczyk respond to Dr. Muecke's question providing information on how the public attitude research confirmed that respondents had familiarity with operations at the western waste management facility.

THE CHAIRPERSON: Thank you.

MR. WLODARCZYK: Tom Wlodarczyk for the record.

The public attitude research respondents or awareness and knowledge of the western waste management facility, and the DGR as a whole, is reflected in public attitude results in a number -- to a number of questions. I can say that we didn't specifically test how much do you

know about the DGR project, but we must remember that work was conducted in November 2009 following several years of sustained engagement and communications with the community over a number of years. So we went into that with that confidence.

Within the public attitude research itself, the respondents were asked how much have they heard about the western waste management facility itself. In this case, 83 percent of the local study area respondents heard a great deal or something. Peoples' knowledge or awareness and ability to answer questions also stems in their confidence that they express in technologies and how they responded to an open-ended question on how to improve their confidence in operations at the western waste management facility, including the DGR.

In the case -- in this case 90 percent of local study area residents were either very or somewhat confident in the technology used and only 14 percent of local study area referenced wanting more information or public education campaigns or -- to improve their knowledge, to seek more knowledge.

Finally, the public attitude research asked at the conclusion to rate OPG's efforts at communicating answering their questions regarding operations, and in this case 81 percent of the local study area residents

rated OPG's, I guess, the performance as either very good or good or saying they had no questions.

So put in that context, in the years of engagement and communications and these high-level responses, we are pretty confident that the respondents were quite aware of the facility, the operations at the Bruce Nuclear Site and the DGR project. In addition, as I mentioned, some preambles provided some factual information about the DGR project to put constituent questions into context. Thank you.

MEMBER MUECKE: Thank you for that information.

MS. BARKER: Diane Barker for the record.

Mr. Andy Kier will present the economics model used for the DGR project. The format used in this presentation is similar to that used in the modelling presentation, Technical Information Session Number 2.

PART 5 - ECONOMICS MODEL

MR. KIER: For the record, Andy Kier with AECOM.

Speaking to Slide 47, the economic models are one of the tools used by economists and socioeconomists to gauge the economic feasibility and

implications of projects on local, regional, and provincial economies. And one of the most well-known and respected models in this country is the interprovincial input-output model. It is owned and operated by Statistics Canada.

This model is used across all provinces by a wide range of public and private sector organizations to assess the effects of large capital projects and investments on national, provincial, and regional economies. Outputs from this model provided a foundation for the economic model used in this project.

For the project at hand, a project-specific economic model was constructed. The model was specifically designed to calculate the economic effects of the DGR project on the selected economic, demographic and service assets in the local and regional study area municipalities.

With all models, calculation integrity and accuracy are concerns, and to this end AECOM took care to scrutinize development and operation of the model.

The model build was organized around a set of modules or blocks, much like Lego, which were constructed and tested on an incremental basis. Model formulations, linkages, calibrations and outputs were all scrutinized for failures, anomalies and inconsistencies.

Added scrutiny of the model was accomplished through peer review by qualified experts within the firm.

The economic models are not instruments designed to deliver decimal point precision. They're objectives, particularly when looking out over a long time horizon, is to deliver a reasoned estimate of outcome that is aligned with input data, assumptions and forecasts of future conditions.

The subject model produced estimates of project effects based on current economic conditions extrapolated across 50 years incorporating the three project phases of construction, operation and decommissioning.

Speaking to Slide 48, this slide sets out the structure of the model. It was framed around nine modules, each of which performs specific calculations and functions.

Module 1 was calibrated with multiplier information derived from Statistics Canada, the interprovincial input/output model. These multipliers, based on 2007 economic data, express the economic outcomes in the provincial economy that could be expected with a unit of investment in specific sectors.

In this instance, electric power engineering and construction for the construction and

decommissioning phases, and electric power generation transmission and distribution for the operations phase.

In Module 2 it was calibrated with information derived from the NWMO. Specific information included annual onsite labour force data for each year of the project, beginning with the start of construction through to the end of decommissioning. The labour income associated with this workforce was also incorporated in the module and, additionally, so were the estimated annual project expenditures for materials and services.

Module 3 used the information in the two previous modules to perform a set of calculations that express the economic outputs of the project for the Province of Ontario. These outputs were expressed in terms of measures and levels. The measures included full time jobs, labour income, gross domestic product and gross output. For each of these measures, three levels of output were defined, direct, indirect and induced.

Module 3 produced economic outputs at the provincial level. The focus of Module 4 was to allocate these to the local and regional study area municipalities and the rest of the province. The allocation was done through a series of calculations premised around likely geographic sources of labour and likely geographic distribution of project expenditures for non-labour goods

and services.

Information to make these allocations was premised around historic workforce data derived from an employee survey of the western waste management facility and estimates from OPG/NWMO on where project expenditures might be made.

Module 5 focused on employment, population and housing impacts. These were projected using information drawn from the previous model, coupled with published and estimated forecasts of municipal population.

Published population forecasts were available for the local and regional study area municipalities out to 2031. Beyond 2031, population forecasts were produced by extrapolation of growth rates from the aforementioned published forecasts.

Module 6, once the population, employment and housing forecasts were derived, the impacts on municipal services were projected across the study period using 2009 per capita service ratios.

Module 7, the focus was on tax assessment. And here projections were made using per capita tax assessment ratios derived from the 2008 financial information returns for each of the local and regional study area municipalities.

Module 9, the configuration of this module

permitted the conditions in the study areas to be projected with and without the DGR. It also enabled a determination of the increment of impact attributable to the DGR in each of the municipalities across the project timeframes for all assets under consideration.

The last module in the model was set up to produce a set of tables that could be directly incorporated in the socioeconomic technical study document.

Speaking to the next slide, in summary, based on the preceding description of the model, statistics were generated that expressed the effects of the project on economic and demographic conditions and service levels within the study area over the project lifecycle.

The variables or factors reported on reflected the subjects of importance identified by local and regional stakeholders through public attitude research and other investigations. Financial variables included employment, income and municipal assessment. Human and physical variables included population, housing, healthcare, emergency services and education.

The model calculations enabled the examination of existing and projected future conditions in the study areas with and without the DGR project. This

enabled an understanding of the DGR impact increment.

Spatial and temporal frameworks; again, just to ensure that the spatial and temporal structure of the model is clearly understood, the spatial areas incorporated in the model were the local study area, the regional study area and the rest of the province beyond the outer limits of the regional study area.

The local study area is constituted by the Municipality of Kincardine. The regional study area includes five municipalities in Bruce Country, specifically the Municipalities of Arran-Elderslie, Brockton and South Bruce, the Town of Saugeen Shores and the Township of Huron-Kinloss.

The temporal framework used span three phases of the project lifecycle, site preparation and construction, 2013 to 2018, operations, 2019 to 2058, and decommissioning, 2055 to 2063.

When economic modelling is involved, it is important to assess the degree of confidence one has in its predictions. For the model under discussion AECOM felt comfortable with its calculations and results. Our rationale for this comfort is founded on the following.

One, the most current multipliers at the time of study were derived directly from Statistics Canada.

Two, the project labour force and expenditure data were obtained directly from NWMO and these data reflected their best assumptions on the project at the time.

Three, historic workforce data and NWMO estimates of expenditure distribution were used to allocate economic outputs within the local and regional study areas.

Four, population projections out to 2031 were derived from municipal forecasts. In 2032 to the study horizon of 2062, the population projections were extrapolated using trends predicted in the formal municipal forecast.

Six, the model built was structured and well tested. All formulations, calibrations and linkages were thoroughly reviewed.

Seven, per capital service levels used in the model were directly derived from 2009 municipal data. Per capita tax assessment information used in the model was directly sourced from 2008 financial information returns for each of the study area municipalities. Averages were used and did not imply precision. Current human economic behaviours and extrapolations of current economic conditions form the basis for our projections and readily acknowledge that these assumptions, although

reasonable today, may not hold true in the future.

Precise estimates of effect are not the objective of the Economic Model. On the contrary, the objective was to arrive as reasoned estimates that predict the scope and scale of the project effects on the study area municipalities over the next fifty years, given current assumptions on how those municipalities would grow.

Twelve point: the model built again was very structured and as modules were formulated, linked and calibrated, testing was ongoing for errors, anomalies and inconsistency.

And finally, once the model was fully built and calibrated, its integrity and performance were thoroughly reviewed and checked by in-house AECOM specialists.

With all that, we felt fairly confident in the results.

Thank you.

THE CHAIRMAN: Thank you very much.

I realize I was remiss in one of my duties which was to introduce the gentleman to my right who is Pierre Bourgeau; he is another one of the legal counsel to the Panel and he is here in the place of Denis Saumure who will be reappearing apparently later on this afternoon.

Now, if we could proceed with questions.
Dr. Archibald?

MEMBER ARCHIBALD: Yes. I would like to address the slide that is on the screen right now.

In Table 5.1, confidence predictions are made using effects magnitude levels for a range of data input and assumptions that you had just listed verbally. Now, they are stated to range between confidence levels of high -- about 85 percent of the features added there are the 13 features -- and two are medium or low confidence levels which has an overall confidence rating of high, appearing to be slightly overconfident because that only represents 85 percent of the judgement features in your presentation.

Could you justify the overall relevant confidence contribution level, please?

MR. KIER: Andy Kier, for the record.

We did feel confident in the projections that were derived from the model given that we were trying to do reasoned estimates. I flagged two points in here where we feel that, you know, the situation may change over time. Once is there is really no way of forecasting what the economy of the County will look like over the next fifty years. We could feel fairly confident that we have a good grip on it over the next five years, probably

a little less confident over the next twenty years, but when we're out at the end of fifty years, as we well know, even in today's terms on the world economy, it's incredibly hard to predict what is going to happen.

So, we flagged out one with "OK"; that's an area that we, you know, we don't feel that we can predict with 100 percent reliability and confidence. I wish I could but it's not possible.

And on the one of the -- one with the two hash marks of two T's, I guess, "Population Projections Beyond 2031". We had to extrapolate from formal forecasts for those, so up until 2031, Bruce County and the constituent municipalities had a pretty good indication of how they wanted to grow. Beyond that, forecasts weren't available. So, what we did was really just to project off of that base.

MEMBER ARCHIBALD: Thank you. It basically establishes that there's a temporal variation with your confidence level and the only thing that sort of triggered this at the end of your presentation was your term "fairly confident" which I heard again in this response.

Between high confident and fairly confident, it's satisfactory. Thank you.

MEMBER MUECKE: Mr. Kier, in the model you're using, local populations and housing, could you

tell me how does the Economic Model account for seasonal residents?

MR. KIER: The Economic Model as configured for this project did not look at seasonal residents. We really just looked at the housing count or the municipality which may incorporate seasonal or non-seasonal residents.

MEMBER MUECKE: Okay. Thank you.

Now, if I could take you to the submission, page 46; there is a section called "Sensitivity Analysis" and the absence of sensitivity analysis on the Economic Model is justified on the basis that results represent the order of magnitude estimates. And I accept that, but I am more familiar with physical, geological and ecological models and I think we would rarely claim to produce more than order of magnitude results. Hence, those models are not predictors either, but these models - the ones I refer to, the physical, geological, ecological ones that I'm familiar with - they are subject to the sensitivity analysis. Why not Economic Models?

MR. KIER: Economic models are subject -- oh! Andy Kier, for the record -- Economic Models are subject to sensitivity testing but here, again, based on the data that we're calibrating this model with, there are sensitivity implicit in some of that calibration data.

For example, sensitivities are obviously done by Statistics Canada and their aggregation of multipliers. So, it really wouldn't be in our purview to try and do sensitivities on those multipliers; they come out of a pretty reasoned set of calculations that Statistics Canada take and we are not privy to how they do those particular calculations.

Again, on the population forecast that the municipality is using, they would normally do high, medium and low forecasts but then their published forecast that they use for -- that they put out for public consumption, we used in this model. So, that was based on their analysis.

When we take all of the inputs that we received and we run them through our model, certainly informally, we are doing sensitivity analysis all the time; we're looking at what makes things go up and what makes things go down and what -- so we understand, because of the model built, because it was done on an incremental basis, we have a very strong understanding of cause and effect relationships throughout that model, we know what the drivers are and, at the end of the day, when we start to look at sensitivities, for example, if I varied the allocation of workers to, let's say, the Municipality of Kincardine by 25 percent, that results in three people.

So, when we start looking at those magnitude of effects, we thought, all right, let's take the data as we've been given it and we've received it and used it, and we'll put out our best estimate and that's what our model is: a best estimate, given those assumptions.

MEMBER MUECKE: I accept that view as presented as your best estimate, but from what you have just been outlining, it seems to me it could also include a discussion of whether sensitivity is lying and which ones are greater and which ones are less to allow the consumer of the data to get some idea of, you know -- you know, what the variability involved is.

Would that be a truthful statement?

MR. KIER: Andy Kier, for the record.

Yes, we could have indicated the -- where the sensitivities lie in a particular model. We didn't do that in the case of the documentation provided, but we certainly know what those drivers are.

MEMBER MUECKE: Could you still provide it?

MR. KIER: Yes, I could provide you with what the main drivers in the model are in terms of assumptions.

MEMBER MUECKE: We would appreciate that.

THE CHAIRMAN: I would note that as an

undertaking, number 2, which is that the Panel will be provided a description of the primary drivers that determine the outcome or the output of the Economic Model such that the Panel can understand more clearly what difference it makes if you change certain outputs versus other outputs to the overall outcome.

Is our request clear?

Is that request clear? Good, thank you.

I have a follow-up question which just kind of brings us back to that order of magnitude view of the world. So since it is an order of magnitude model and we understand that, what are the consequences of it being an order of magnitude ROM with respect to the overall impact on community well being?

MR. KEIR: I think "order of magnitude" may be a bit of a dangerous word or dangerous phrase and it may be it differs between different disciplines. So when I'm using it as an economist I'm kind of looking at percentages, so I would say order of magnitude. I would like to be within 5 percent of actual in the near term. Over the intermediate term, let's say out to 20 years, I'd like to be within 10 percent accuracy of actual and when I'm at the end of this period, I would like to be within 20 percent of actual barring any really extraordinary circumstances happening in the economic world and I feel

that what we have here probably fits within those parameters.

THE CHAIRPERSON: Thank you. That actually was very vital information because yes, as a natural scientist, an order of magnitude for me is a lot more than 5 or 10 percent, okay, depending of course on the original number.

Dr. Muecke?

MEMBER MUECKE: On page 45, the model used is Statistics Canada input/output multipliers reflecting the 2007 economy, I believe, and my question is why was this year chosen, how representative is it of the current situation and would it not perhaps have been better to average years so as to reduce the influence of economic fluctuations?

MR. KEIR: Good question. Andy Keir, for the record.

Again, 2007 was selected. We had the benefit of doing a number of economic models in Ontario at the time that we did this model, as well, and Stats Canada, their input/output statistics always run a couple of years behind the current date, so they're either two to three years behind. And their advice, when we were looking at 2008 statistics, were not to use them because that reflected the economy at the time which we were just

entering that huge economic dip and so we went back to the 2007 which they were advising their clients, at the time, of which we were one and we used those particular multipliers which reflected a growing economy, but a much more stable economy than the 2008 numbers, so that's why we used that particular tranche of data.

MEMBER MUECKE: What about averaging?

MR. KEIR: In the modelling that we've done, we don't usually do averaging. Again, we were running a model out over a long period of time. Perhaps if it had been a more or a short-term projection that we were trying to do, we might have used averages. Two thousand and seven (2007) reflected a growing economy, but a modest growth just before it dipped and that's what we thought would be a good barometer for going forward and it seemed to be in line with the population and employment projections that Bruce County, itself, was projecting. That's why we kind of lined them up.

MEMBER MUECKE: Could I perhaps -- thank you for that.

And I'd just like to follow this up a bit. Given that 2007 was used to determine the multipliers in the allocation exercise, what was the activity level at Bruce site at the -- at that year in terms of the local economy and how would that have impacted on the results?

There has to be invariable activity at Bruce which obviously would influence what the economic outputs were for any particular year.

MR. KEIR: Andy Keir, for the record.

Again, the multipliers that come from Statistics Canada are at the provincial level and you have to go through an allocation exercise to parse the outputs to a regional level. At the time, Bruce County was in the -- or the Bruce Nuclear Project was in the throes of refurbishment and so forth, but again, those aren't going to have a strong effect on the multipliers coming out of Statistics Canada. And indeed, in our projections going forward, the refurbishment has taken place and the population projections and employment projections for Bruce County don't reflect that refurbishment period out beyond when it occurred.

MEMBER MUECKE: I'm not an economist, so excuse my ignorance here, okay? But when you do the allocations, they are done on a base, right, which is a local base? Am I right on that?

MR. KEIR: Correct, we're producing a forecast of the economy in Bruce County using their population forecast and employment forecast and we used it for the period of this project. Over top of that, we overlay what we think are the project effects associated

with this project. That way we're able to get the increment.

MEMBER MUECKE: Yeah, but you still have that base, okay, which is basically Bruce County and that is when the choice of year may become critical depending on where the refurbishment was taking place or what other economic activities were going on in Bruce County at the time; am I right on that?

MR. KEIR: Andy Keir, for the record.

Again, I think the County would be knowledgeable that there was a period of rapid growth in the municipality associated with the refurbishment, but they also knew that that refurbishment was coming to an end and in their projections for the future going forward, they would have distilled that piece out.

MEMBER MUECKE: Thank you very much.

THE CHAIRPERSON: Following along on the same theme, I have a couple of questions as well. Would you expect a significant difference in predicted project effects had during your allocation exercise you assumed that there was a more of a targeted set of programs aimed at maximizing local and regional labour and suppliers?

MR. KEIR: Andy Keir, for the record.

Yes, we've done a number of big projects for looking at the allocation of expenditures and I would

say in most cases there's always an issue with what they call leakage, so what leaks out of the local area. And in terms of municipal and proponent implementation strategies, it's very commonplace for those entities to try and optimize the allocation of expenditure that could be made in the local area and I think that was one of the recommendations that came up in the peer review.

THE CHAIRPERSON: Thank you.

A general question, how well in your experience has this type of model, the linked modules, performed in other projects; in other words, have there been comparisons between predicted and actual and were the model results really within the expected percentage deviation of -- between predicted and actual?

MR. KEIR: I've used this modelling framework quite extensively for all of the nuclear facilities in Ontario, many projects across Canada and worldwide. I think barring major outside disruptions in the economy, or changes in the economy, we've been fairly good in terms of the results that have been projected.

Again, you have to temper these over time. So you're usually more accurate in the near term, a little less accurate in the mid-term, and you hope you're in the right ballpark in the long term.

THE CHAIRPERSON: Thank you.

I have a specific question regarding targeting the model to specific communities.

So in your experience, has this type of model been run for Aboriginal communities? In particular, could the model be used to predict impacts upon Aboriginal employment, Aboriginal population, housing, effects on the commercial fishery?

MR. KEIR: I haven't done an input/output analysis for -- Andy Keir, for the record.

I have not done an input/output analysis for a First Nations community. I have done economic modelling for First Nations, but it's of a different nature than this particular module.

We're modeling a very specific community at that stage, with a very specific set of pursuits. Here we're trying to model a more generalized economy.

THE CHAIRPERSON: Thank you.

And are there models out there available for -- specifically for effects on traditional uses of the land?

MR. KEIR: Andy Keir, for the record.

I'm sure there are. I'm not -- I'm not conversant exactly with what they are. I know what we have -- we have done, but I am sure there are also others out there.

THE CHAIRPERSON: Thank you.

Dr. Archibald?

MEMBER ARCHIBALD: I have one question, and this may already have been answered for Dr. Swanson, under questioning for Section 4 of the presentation.

But, on slide 47, you had stated:

"The economic models used to assess the economic implications of large projects on a local, regional, provincial and national economy scale ..."

My question is, does the reliability of the model vary with population size? That being, if communities are smaller in size, would results be less reliable if you have greater fluctuations in demographics and so on?

MR. KEIR: Andy Keir, for the record.

Yes, the inter-provincial input/output model produces outputs at the provincial level. Once you're at the provincial level, then you have to allocate those down, using assumptions, to local and regional levels.

So smaller communities are probably -- do not have as strong economies as a larger area, so you would be more confident in a larger centre. For example,

if you were trying to say, here's what going to happen in Toronto versus here's what's going to happen in -- in perhaps, Kincardine.

MEMBER ARCHIBALD: Thank you very much.

THE CHAIRPERSON: And I have a final question.

Is it correct for the Panel in our understanding that the economics model was based upon best available assumptions rather than uniformly conservative assumptions?

MR. KEIR: Andy Keir, for the record.

Yes, I think the model was based on the data that we were able to obtain and based on our knowledge and understanding of the project, and also on projects of a similar nature, we constructed this model.

THE CHAIRPERSON: Thank you.

Are there any further questions?

Okay.

Thank you very much.

We'll now proceed with Part 6, Current Use of Lands and Resources for Traditional Purposes by Aboriginal Peoples.

MS. BARKER: Diane Barker, for the record.

This part of today's technical information session, the material and Aboriginal interests will be

presented with two different presenters.

The first section which discusses the assessment of effects on the use of lands and resources by First Nations and Métis peoples, for traditional purposes will be presented by Mr. Tomasz Wlodarczyk.

The second part, the assessment of health effects on First Nations and Métis peoples will be presented by Ms. Theresa Repaso-Subang. Ms. Repaso-Subang is a senior technologist and risk assessment specialist with Golder Associates, and she'll be presenting by phone from Toronto.

Mr. Wlodarczyk will start.

**PART 6 - CURRENT USE OF LANDS AND
RESOURCES FOR TRADITIONAL PURPOSES
BY ABORIGINAL PEOPLES**

MR. WLODARCZYK: Thank you. Tomasz Wlodarczyk, for the record.

I'll start off with the conclusion of our assessment and then go through the rationale for that.

Effectively, the environmental assessment findings are that the presence of the DGR is not likely to have a measurable adverse effect on traditional use of lands and resources by Aboriginal people.

And the conclusion was informed largely by the results of the analysis of likely environmental effects of the DGR project, including air and noise, which, as you've heard previously, are of low magnitude and geographic extent, either restricted to air as immediately adjacent to the Bruce nuclear site or within the site study area.

The confidence that we have in this finding is based on a logical analysis that we've explained earlier in terms of the three screening processes and the robustness of the analysis done for the other assessments at the Bruce nuclear site.

This slide, slide 54, depicts that screening process where we identified potential interactions, followed by a second screening for measureable change related to those effects on VECs, and measureable changes were then addressed further in terms of magnitude, duration, et cetera, for their significance.

To walk you through the screening process, we looked at the initial potential interactions, were with what we generally called "the presence of the DGR project." And this was our way of acknowledging that a nuclear facility of this nature may have special meaning to Aboriginal peoples which may -- which they may attach to the radiological nature of the project, and also the

interactions with noise and the aquatic interactions of the VECs, which were -- the major interactions with the traditional use of lands and resources.

The second screening, in terms of measurable change, relied again on the analysis of the disciplines where the findings were that no radiological effects are anticipated on aquatic or VECs, that the DGR project itself does not preclude continued use of lands and resources in a local study area or the regional study area in any way.

And that the changes in noise levels that might result in disruption to wildlife species important to First Nations and Métis people, were considered to be something that we needed to assess further.

In that assessment, we relied on the expertise of wildlife biologists, and the noise analysis.

And here the changes in noise levels from the DGR project was concluded not likely to affect wildlife species, simply because of the low magnitude and geographic extent of those effects. And that -- given that, the extent of any harvesting success in the immediate vicinity of the Bruce nuclear site, recognizing that those activities don't occur on-site, was not considered significant.

I may be repetitive, but I just want to be

clear on the basis of our findings. The Bruce nuclear site is not used for traditional purposes.

The construction effects are expected to be within the DGR project area, and particularly, the issues regarding the direct loss of any kind of habitat.

No measureable changes to water quality are expected outside the project site, including both surface waters and waters of Lake Huron.

No adverse effects on aquatic VECs ecosystem components that might be harvested or otherwise used by Aboriginal peoples are expected.

As such, there are really no tangible reasons or affects that we could identify on Aboriginal communities' use of lands and resources, through direct harvesting or other economic means.

Once again, although the noise levels through site preparation, construction and decommission may increase, it was concluded that these minor changes would not have an appreciable effect on wildlife species and would not affect harvesting success should it be conducted in the direct vicinity of the Bruce nuclear site in the Baie du Doré area.

At the risk of being repetitive, we relied on the simple logic of analysis presented in the three screening step and the findings that I just mentioned. We

have confidence in the air and noise modelling to support the analysis.

I'll dabble a little bit in terms of what we've learned. We had provided capacity or that -- capacity and opportunities to First Nation and Métis people to participate in an environmental assessment whether through the EIS process or through this Panel process. And the approach to the effects assessment and the magnitude ratings were shared with the First Nations and Métis for feedback and then put prior to finalization.

We are asked to address the issue of land-leasing activities by certain First Nations. To be clear, this issue was not directly addressed in the technical support document, but I'd like to speak to our perspective on it.

The likely effect on cottage-leasing lands from aboriginal peoples and the land-leasing activities of First Nations are anticipated to be similar to the economic effects expected in the local and regional study area, that is, you know, a beneficial effect on business area could be anticipated during all DGR project phases when there may be increased demands on leased cottage properties to increased population or transient workforce.

Disruption to commercial business area, the activities are commercial business, in effect, including

the land leasing, are not expected due to nuisance factors or traffic caused by the DGR facility. No residual adverse effects on the tourism industry were anticipated. I mean, the socio-economic TSD, largely because adverse effects of community character are not expected. No adverse effects are anticipated that would diminish the attractiveness of the area or establish a stigma, and we'll speak to that in the next presentations.

Also, no adverse effects on residential property values are anticipated, largely because no changes in dust, noise or local traffic conditions are expected which are typically drivers of diminished property values around industrial facilities. Also, the DGR site would not likely be visible from lands leased by aboriginal peoples.

Increases in off-site noise during site preparation, construction and decommissioning, again are of low magnitude and limited in area. Effects on the use and enjoyment of properties in -- of the cottage properties, but that's at least by First Nations, are not likely to occur because these effects are very localized in the Baie du Doré area.

We were also asked to examine commercial fishing issues. I'd like to show what we've -- what we know at this point is that Lake Huron supports both

commercial and recreational fishing and is known to be a valuable resource and source of fish harvest for aboriginal peoples. The Saugeen Ojibway Nation has commercial fishing rights in Lake Huron and Georgian Bay, and this was confirmed by -- well, recent or past court decisions.

We know that the Ministry of Natural Resources and the Saugeen Ojibway Nations have had, and are believed to be having, discussions and re-negotiating an agreement for the management of the fishery by the Saugeen Ojibway Nation and their role in that process, particularly in the vicinity of the Bruce Nuclear site where that fishing does occur.

Once again, the basis of our conclusions regarding commercial fishing are that no changes in fish populations nor any changes in the water quality or quantity are expected that might affect commercial fishing as a result of DGR project based on the technical analysis conducted in other technical support documents.

Thank you.

MS. BARKER: Diane Barker, for the record.

I believe Ms. Theresa Repaso-Subang is on the line. She'll carry on with Slide Number 62.

MS. REPASO-SUBANG: Theresa Repaso-Subang, Senior Toxicologist, board certified with the American

Board of Toxicology, Golder Associates, for the record.

Slide 62. The environmental assessment considered the potential effects of the proposed DGR project on human health in two separate assessments; radiological and non-radiological.

The radiological assessment evaluated the changes in radiation doses to members of the public and workers potentially resulting during the operation of the project.

A non-radiological assessment evaluated the changes in chemical concentrations in the physical environment and exposures by members of the public and workers, potentially resulting from the operation of the project.

Slide 63. The nearest First Nations community to the DGR site is approximately 25 kilometres away. The Métis community is a collective of people, not a physical location. The assessment assumes no First Nations or Métis persons will be located closer to the project compared to other members of the public. The assessment also assumes that there is no potential for use of land in the site-study area for traditional hunting and gathering purposes.

For these reasons, the potential influence of the project on the health of Métis people is considered

to be similar to members of the public for the purpose of the human health assessment.

Slide 64. This figure identifies the receptor locations for both the radiological and non-radiological assessments. What is common to both, the radiological and non-radiological assessments, is that the receptor locations were identified on the basis of proximity to the sources of emissions at the project and lifestyle characteristics.

These receptor locations included workers at the site, study area, local residents, seasonal users, as well as members of the nearest First Nations communities considered to be members of the Saugeen Ojibway Nation, as represented by Location 5, and members of the aboriginal community who may periodically spend time at the burial ground, represented by Location 6.

Slide 65. The radiological assessment identified nine potential critical groups representing those receiving the predicted doses higher than the average in the exposed population. The nine potential critical groups were identified on the basis of proximity to the sources of emissions at the project and on the basis of lifestyle characteristics.

For purposes of the assessment, it was conservatively assumed that the DGR project would double

the radiation dose from the Western Waste Management Facility.

Slide 66. The highest predicted dose among the nine potential critical groups representing members of the public was for Group BF14, located to the southeast of the Bruce Nuclear site. The estimated doses for Group BF14 were considerably less than 1 percent of the regulatory limit of 1,000 microsieverts per year for members of the public.

The radiological assessment was completed following a conservative approach by predicting project-related radiation emissions in close proximity to the project. Therefore, increasing the size of the local study area would not change the conclusions of the radiological assessment.

Slide 67. The non-radiological assessment identified eight human receptor locations representing workers at the DGR project, members of the local residents, seasonal users, and members of the aboriginal communities represented by Receptors 5 and 6.

As with the radiological assessment, the receptor locations were identified on the basis of proximity to the sources of emissions from the project and lifestyle characteristics. The health effects on Métis people are considered in the same context as other human

health receptors.

Slide 68. Although the health assessment did not specifically evaluate a Métis person, health effects to Métis people are expected to be similar to those of the public. This is based on the following reasons.

The public health receptors represent the closest point of off-site exposure for any person. A Métis person could not be exposed at a closer location or at a higher level of exposure than a member of the public. A Métis person would likely exhibit the same physical exposure characteristic as a member of the public.

We acknowledge that Métis dietary habits may differ from members of the public in that they have a higher level of consumption of country foods. However, changes in the environment as a result of the DGR project, such as changes in air quality, water quality, or groundwater quality will not have indirect effects on the terrestrial or aquatic environment. Because there are no indirect effects on the terrestrial and aquatic environment, no indirect effects are expected on country foods.

Direct effects on terrestrial and aquatic environment are restricted to the project area, a location when there is no public access; therefore, a higher

consumption of country foods by Métis people would not result in a higher exposure than members of the public because country foods accessible to the Métis would not be affected by the DGR project.

Thank you.

THE CHAIRPERSON: Thank you very much.

We'll now proceed to questions from the Panel, and I will start. This is with respect to the topic of uses of lands for traditional purposes, so it'll be directed at Mr. Wlodarczyk.

So you make reference in the written submission on page 48 to, quote:

"The overall assessment is valid based on extensive desktop research."

Could you provide the Panel with more details and a definition of what, "extensive desktop research" really was, and provide examples of the sources of the data that were identified during that research?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The desktop research that is being referred to is twofold. Basically, a review of the correspondences that have historically been exchanged between OPG and Aboriginal organizations and First Nations groups regarding the Bruce Nuclear site, the DGR project, and

submissions to various other environmental assessment processes, for example, the Bruce to Milton Environmental Assessment, which, for example, the Métis Nation of Ontario commented as well, and there were others. The new nuclear at the Bruce project is another.

Those were used to identify, to glean whatever information we could glean in terms of use of lands and resources. And the bottom line is the First Nations and Métis have traditionally used lands and resources in a broad area and can continue to do so in close proximity to the site or elsewhere in the regional study areas within their own communities. So that is a given.

Other desktop research basically refers to the work that was done to establish baseline of wildlife and vegetation communities in the terrestrial environment TSD or the Aquatic Effects Assessment TSD.

THE CHAIRPERSON: So I understand from your answer that it was a combination of assembling evidence acquired through other projects, as well as evidence provided to you by some of the other disciplines?

MR. WLODARCZYK: Correct.

THE CHAIRPERSON: Thank you.

Dr. Archibald?

MEMBER ARCHIBALD: Then leading on from

that I would infer that desktop research is essentially historic data in any shape, way, or form?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

Historic data in terms of, you know, the correspondences that come from a particular year, but in general they express the interests of the First Nation or the Métis community, which we have basically taken as given their interests in the past and currently.

MEMBER ARCHIBALD: Well, speaking of current then, on your Slide 57, on one of the bullets you state that:

"The capacity and opportunities were available for First Nations and Métis people."

And then in your written summation or presentation on page 50 there is a sentence in quotes:

"No input was received from Aboriginal peoples on the magnitude ratings for effects on current use of lands and resources for traditional purposes."

My question to you is how accessible were the information assessment methods such that input from the Aboriginal peoples was encouraged in this environmental assessment process?

MS. BARKER: Diane Barker, for the record.

I will provide some information, and at this time, I'd also like to introduce Ms. Donna Pawlowski, who is OPG's Manager of Social Assets and Environmental Assessment.

The DGR project approached First Nations very early on in the project to engage, to seek input from them, to discuss their views and information on the project. There were also a number of opportunities including guideline reviews, hearings, guideline hearings in 2006 and a review in 2008. OPG first approached the Métis in 2008.

In identifying groups to engage in the process, particularly First Nations and Métis, the project looked first to who had engaged in other projects at the Bruce Nuclear site. The First Nations had. In the early days, up to 2006, there had been no Métis involvement. In 2007, the Métis were developing their guideline on consultation and accommodation for Métis peoples. So once the project became aware that there was a Métis interest, OPG approached these groups and continued to engage with First Nations.

There was an expressed interest in having them participate in the project. There were discussions about agreements and a need for capacity to assist them

engaging on the project. In discussing the participation agreements, topics for funding were engaging, providing an opportunity for those groups to communicate with their community members, and expressed interest in having traditional knowledge that could be used in the assessment, and those were all approaches that -- those were all included in OPG's approach.

The record of OPG's engagement on the DGR project with First Nations and Métis is provided in Section 2 of the Environmental Impact Statement.

Ms. Pawlowski, would you like to add further?

MS. PAWLOWSKI: Donna Pawlowski, for the record.

I think I would just -- the question, I believe, was how accessible is the information, and as Ms. Barker noted that OPG strives to ensure that the information is accessible to all. We meet, we discuss the information, answer any questions, provide follow up. We also, through the protocol and/or participation agreements, ensure that the First Nations and Métis communities have the ability to hire technical experts themselves to review the materials and provide feedback to them directly and/or to Ontario Power Generation. So we would say the information was accessible.

MEMBER ARCHIBALD: I'll make myself clear: How accessible were the methods so as to encourage Aboriginal peoples to produce input into the EIS? In fact, the question was, was information forthcoming from Métis and other Aboriginal peoples on the basis of the requests that were made?

MS. PAWLOWSKI: Donna Pawlowski, for the record.

I'll start and Ms. Barker may add some information. With respect to traditional use of lands and resources, we have not -- OPG has not been provided detailed information on traditional or current use of lands and resources by First Nations or Métis peoples. That is not atypical in environmental assessments, particularly around our nuclear sites. Often the First Nations and Métis communities wish to retain that information as -- not sensitive information but it's to be respected and to be kept private, and we can appreciate and understand that. And if there is an area where there is a potential effect, that's where we seek to better understand what that effect may be.

MEMBER ARCHIBALD: Thank you, that's a very good answer; and thereby the reason for desktop research. Thank you.

THE CHAIRPERSON: Dr. Muecke.

MEMBER MUECKE: This is a bit of a follow-up on the last question, but I'd like to quote from the submission on page 49, which says:

"There are no tangible reasons for Aboriginal peoples to change how they value the plants and animals that they harvest for traditional purposes."

Now, after what I've just heard, you know, what does -- can you expand on the phrase "tangible reasons" then?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

I guess that's a soft way of saying that the results of our analyses on the aquatic, the terrestrial VECs, the radiological environment all point to the fact that no significant adverse effects are anticipated on wildlife. There is no reason that Aboriginal people and the Métis people -- sorry, First Nations and Métis communities cannot continue to do what they do, where they do it, however they wish to do it, other than access to the Bruce nuclear site. So the tangible refers to the results of our technical analysis.

MEMBER MUECKE: But if one takes a world view and Aboriginal values into account, would -- if you say something is not significant, this may be very true in

our context, but it may not be valued or it would be valued quite different by a member of the Aboriginal community.

So I have some difficulties here with applying values of significance to components which are of interest to Aboriginal people that are not based on their value systems. Do I make myself clear?

MR. WLODARCZYK: Yes, thank you. Tom Wlodarczyk, for the record.

The significance criteria are technical analytical criteria that rely on once again the results of other studies. And magnitude, geographic extent, timing, duration, irreversibility are relatively value free technical criteria.

In the technical support document we acknowledge the differing world view of -- or the world view of First Nations that others may share as well, that we know of, and we've taken the analysis as far as we felt comfortable given the information we have in front of us.

MEMBER MUECKE: Thank you.

THE CHAIRPERSON: You recognize a theme in some of our questions here. It's simply we just require a confirmation.

So I understand, Mr. Wlodarczyk, that you stated earlier you relied on the expertise of the wildlife

biologists regarding effects of noise and disturbance on wildlife. So was there any attempt to obtain specific traditional knowledge or expertise in the effects of disturbance on wildlife from Aboriginal representatives?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

I will ask Diane to answer that or with support of Donna.

MS BARKER: Diane Barker, for the record. As we have discussed earlier, approaches were made to the Aboriginal people seeking their input through a number of different mechanisms, including meetings with them, presenting information on the project, providing capacity to assist them in documenting information and sharing information with OPG. Draft technical support documents were provided to First Nations and Métis people. There was no -- the input provided was very limited. There was no documented feedback provided.

Did you want to add, Donna?

THE CHAIRPERSON: Okay. So as a follow-up to that, draft technical supporting documents, even to those of us on the Panel, tend to be rather impenetrable at times if it's not in your area of expertise, let alone not in your culture.

So did OPG hire experts in translating some

of this jargon into accessible language, especially culturally appropriate accessible language, or did you expect that the First Nations and other Aboriginal people would retain their own help in that regard?

MS BARKER: Diane Barker, for the record.

OPG did not engage any experts to provide translation or interpretation to First Nations or Métis people. However, the First Nations and Métis people did have capacity in discussing those agreements. It was agreed that they were interested in having peer reviews done. And so there was capacity for them to hire technical experts of their own.

The First Nations have an environment office. One of the roles of that environment office is to assist with communicating the DGR project to community members. So there was capacity provided.

OPG was also available to meet with members of First Nations and Métis communities should they wish to discuss the technical support documents further and engage further on them.

THE CHAIRPERSON: Thank you. I would like now to once again quote from the submission. In this case it's page 51. So:

"Since all Aboriginal reserve lands are outside the regional study area, including the

identified Saugeen Ojibway Nation fishing islands, the DGR project is not expected to have any effects on these activities or resources."

Could you please clarify why the regional study area did not include reserve lands? Even though the reserve lands were not included in the RSA, have you consulted with the Aboriginal groups regarding the effects of the project and the effects of the exclusion of reserve lands and the consequences of that on your conclusions?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

To be clear, in our initial presentations, we did say that the regional study area was adopted as the basis, as the general study area, has had the greatest potential to capture the direct and indirect effects on natural environment and wildlife.

But we did include those reserve lands and other community areas for the Métis in consideration. If there were measurable effects likely to occur in those areas we would identify them and highlight them. The effects that were identified were expected either at the site study area or in the immediate vicinity of the Bruce nuclear site within the regional study area. Therefore, no adverse effects were predicted or reported on in Aboriginal communities.

THE CHAIRPERSON: So to make sure I am completely clear on this, those no significant adverse effects were identified using the western base cultural paradigm, those definitions were set by typical scientific points of view, not including criteria that might have reflected the alternative worldview as represented by the Aboriginal peoples?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The Aboriginal worldview, particularly of Saugeen Ojibway Nations, is acknowledged, and our attempt to address that, from our western perspective, was to look at are there any of these tangible reasons for why Aboriginal people could not continue to undertake their traditional activities as they were in the past.

We've already discussed the attempts for engagement and consultation. And certainly if information was shared on those aspects, they would have been included in our analysis. As it stands, the worldviews are acknowledged, the effects are assessed from a western scientific perspective, and we're confident in the results.

THE CHAIRPERSON: Thank you for that clarification.

Dr. Muecke?

MEMBER MUECKE: Could we have Slide 58 please? It addresses land leasing by Aboriginal groups and has been a fairly recent development. Have the Aboriginal groups been consulted regarding possible mitigation of any potential adverse effects on land leasing to cottages, has there been any movement in that direction?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

To start, and perhaps others can add, as outlined in Slides 58 and 59, there are no -- if I can use the word -- tangible reasons why adverse effects on cottage leasing should be anticipated. In that case, mitigation measures are not considered warranted using our environmental assessment process.

MEMBER MUECKE: That clarifies it, yes. Thanks.

THE CHAIRPERSON: Dr. Archibald?

MEMBER ARCHIBALD: Again, one other point of clarification, which has probably been done to death recently. This concerns Slide 67, and on page 54 of your written commentary:

"Health effects on Métis people are considered in the same context as other human health receptors."

My question was, originally; has this information been communicated to, discussed with and validated by the Métis? I believe your answer will be one third of those. Would you care to comment? That is, has information on human health to Métis, been communicated to, discussed with and/or validated by?

MS. BARKER: Diane Barker, for the record.

The Métis groups do have copies of the Environmental Impact Statement. It's my understanding that historic Métis and the Métis Nation of Ontario are currently undertaking peer reviews of those documents. We look forward to having the opportunity to discuss the results of those peer reviews with them, but at this time, the information is not available to us.

MEMBER ARCHIBALD: Thank you. As expected.

THE CHAIRPERSON: I would like to address this to Ms. Repaso-Subang, please. This is just, again, to check the Panel's understanding.

To paraphrase the overall conclusion is that because of the very conservative assumptions made in building the modelled doses from radionuclides as well as the exposure to conventional chemical parameters, it is your conclusion that the effects on Métis people would have no chance of being greater than your estimated health effects to the more general population. Is that a correct

statement?

MS. REPASO-SUBANG: Theresa Repaso-Subang,
for the record.

Yes, that's correct.

THE CHAIRPERSON: So in other words if a Métis person happen to be hunting or gathering, right on the fence line and eating much higher proportion of those country foods; notwithstanding that, you feel that your model has accounted for that particular instance?

MS. REPASO-SUBANG: Theresa Repaso-Subang,
for the record.

Part of the response to this has been addressed in our response to IR EIS-05216. In that, the assessment was evaluated assuming that the public represents a bounding case. These receptor locations that we've evaluated in the environmental assessment represent receptors with the highest exposure. And the answer to that question would be yes.

THE CHAIRPERSON: Thank you.

And one final confirmation is that your modelled exposures, although very conservative, I'm assuming are based on normal operating conditions. Is that correct?

MS. REPASO-SUBANG: Theresa Repaso-Subang,
for the record.

Yes, that's correct.

THE CHAIRPERSON: Thank you very much.

I think, unless my two fellow panel members have follow-up questions, that concludes our questions on this particular topic. So can we please move on to Section 7, which is Sociological Aspects of Siting Nuclear Facilities.

Ms. Barker.

PART 7 - SOCIOLOGICAL ASPECTS OF SITING NUCLEAR FACILITIES

MS. BARKER: This section of the technical information session will be, again, presented in two parts. Mr. Kevin Powers, Director of Nuclear Public Affairs with Ontario Power Generation, will present information from published literature on what factors relating to nuclear facilities contribute to influence people's attitudes toward a community, and contribute to decisions to make changes with regard to life choices. Mr. Wlodarczyk will discuss the community, community cohesion, influences of the media on community cohesion, and will also discuss experience from other communities on how community cohesion changes in relation to nuclear projects.

MR. POWERS: Kevin Powers, for the record.

Experience with other projects, particularly those involving radiation and/or waste, indicate that population levels may be affected if residents choose to leave their community as a direct result of the undertaking, and if the growth is not sufficient to offset this loss.

Although the Bruce nuclear site has been in operation for decades, the DGR project represents a new and potentially unfamiliar nuclear operation. Sociological research indicates that individuals or groups tend to conduct a mental cost/benefit analysis of what they are satisfied or dissatisfied with in their communities, and that there is a tendency to tolerate certain conditions until a threshold is reached. At such a time, individuals or groups may become more motivated to leave and find a new location with more positive and satisfying features.

The sociological research that forms the basis of this statement reflects the rational choice theory; that is, the underlying basis of most economic theories of consumer preferences.

This suggests that behaviour is the outcome of rational deliberation. People weigh up the expected benefits and costs of the different actions and choose the

one that offers the highest expected net benefit or lowest expected net cost.

Other sociological research that supports the premise of a mental cost/benefit analysis is based on the theory of reasoned action and the theory of planned behaviour.

These posit are motivated by self-interest. They weigh expected costs and benefits of alternatives, choosing alternatives with the highest benefits against the lowest costs.

Migrations of populations in and out of nuclear host communities as a result of nuclear operations where safe nuclear operations exists are infrequent and rare. Migration is a result of quality of life factors, such as; jobs, community, schools, education, healthcare, interests and activities.

OPG community surveys of host community residents demonstrate concerns over personal health and safety rank very low when compared to top-of-mind community issues and concerns. OPG's own experience points to continued population growth in and around existing facilities supported with sustainable communities and healthy real estate markets.

In the case of OPG's proposed DGR, it is a particularly unique situation, where we'll be on a site,

which has hosted eight large nuclear power reactors and their associated infrastructure for several decades, and a nuclear waste management facility for more than 40 years.

The DGR itself will have little impact on population migration compared to the impact of the operation of the other nuclear facilities on the sites.

Effective communication and community engagement with permanent residents, seasonal residents, and new residents, coupled with the continued safe operation of the nuclear facility will not result in any appreciable out-migration of populations, limited personal concerns and risk perceptions as a result of building trust through operational commitments and competence by the operator and the public perception of predictable continued safe operation.

Building and maintaining support for nuclear operations requires a dedicated, planned approach for community engagement efforts over the life of the operating facility. An effective programme will ensure public confidence is not eroded and public trust is earned and maintained.

Constant nurturing and addressing public perception of risk in an open and transparent manner is essential in building public awareness, understanding, and confidence in the safety of operations.

Communications, whether positive or negative, should be complete, fair, accurate and timely, and delivered in clear, understandable language. The programme should be continuously evaluated and reviewed, and updated under a managed system to ensure high standards of performance, compliance, and ongoing effectiveness.

Best industry practices for communications and engagement include regular and frequent reporting; two-way communications; regular updates and notices; media and issues management; and consultation, listening to input from the community.

In addition there is a need for compliance with CNSC guidance in particular RD-99.3.

Stigma refers to the, in this case, the negative images attached to a neighbourhood, community, or other geographic area and its residence, or to products and services by the residents themselves or others from outside the community. There is no strong evidence for the presence of an existing stigma associated with the OPG's existing western waste management facility and there are no strong indications that the DGR project would result in a further attribution of stigma.

Social scientists propose that people's images of a place become marked by attitudes, and that

these attitudes motivate action or changes in behaviour. Stigma research undertaken in the context of risky technologies or facilities is considered directly applicable to the DGR project. And there are five identifying features: A hazard with the perception of high risk consequences; a standard of what is right and natural has been overturned; the effects inequitably distributed across social groups or geographic areas; the effects of the event are unbounded; and management of the hazard is brought into question.

Research also indicates that before a community becomes stigmatized and adverse socioeconomic events begin to emerge the following needs to occur: A precipitating event or trigger; information that confirms the belief of a threat; and behavioural changes.

That being said, there are a number of mitigation measures around stigma: The publication disclosure of facility performance and monitoring results; a central information centre; ongoing stakeholder engagement; explicit consideration of stigma; building trust; informing the public and educating scientists; a knowledgeable media; an impact reduction mechanisms such as property value protection programmes.

The DGR project has generated increased opportunities for students and others. Between 2005 and

2012, the regulatory approvals phase of the DGR project utilized numerous universities to collect and interpret site data, conduct scientific studies, perform specialized scientific modelling services, and provide expertise for the technical peer review of reports and studies prepared by the NWMO and others. In all, 14 universities have participated in the geosciences programme with 15 professors and 10 graduate students. A hosting agreement provides for local and international tours in support of education. And OPG has provided funding to the Kincardine continuing education facility.

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record. I'd like to continue.

The next group of slides are prepared and presented in the context of issues and questions raised regarding boom and bust effects.

Effectively, what we wanted to do through the assessment is understand municipalities -- whether municipalities service providers can cope with changes and demands due to the project; in particular, population changes.

In Slide 76, we report on effects of the DGR project on communities and infrastructure. As mentioned earlier, the site preparation construction phase will require between 80 and 200 workers annually with a

peak of about 200. During operations, the 40 year time period, we are looking at approximately 40 jobs onsite.

The small workforce is expected to affect tourism accommodation providers by placing increased demands but is not expected to measurably affect the industry overall. This is based on past experience with refurbishment projects and the in-and-out migration of much larger transient work forces at the Bruce Nuclear site. Therefore an increased demand for accommodation will likely help maintain the economic viability of existing providers but the change in demand is not expected to be of sufficient magnitude to generate lots of reinvestments. So we are not looking at major hotel and campground development to accommodate the up to 200 workers that may come to the site on a daily basis during a short period of time.

Finally, through the economic modelling, the population growth is not expected to impose noticeable increases and demand in housing stock, municipal infrastructure or recreational opportunities.

Continuing on Slide 77, this small workforce -- once again, maximum of 200 for the DGR project -- will result in only minor additional requirements for health and safety services and facilities. As described by Mr. Kier, the additional

capacity estimates based on service capacity ratios indicate that DGR project could be associated with less than one inpatient hospital bed, less than one staff person for both emergency medical and police services and approximately two fire fighters. In the context of order of magnitude results, as indicated by Mr. Kier, these are considered very minor.

Stakeholder interviews with local and regional police services also indicate that the DGR is not a cause of major concern regarding impacts on community services. The feedback we have been getting is that the communities are experienced, well-prepared, and they plan for these things when they have the information to know it's coming.

I would like to move over to social issues. In terms of making sure that that information is available, OPG will continue to work with local municipalities, health and safety providers, local police, emergency medical services and other officials to mitigate any effects related to the DGR workforce. This is a project that is occurring within an operating nuclear facility, within an operating site that has a long history of relationships, consultation mechanisms. If there is a strong safety culture, there is also a strong information and communication culture within OPG.

The potential measures; and we are asked what are the potential measures? Working with DGR contractors to minimize reliance on transient workforce, if this becomes an issue; conduct the orientation programmes for incoming workers; traffic management plans can be modified to address specific traffic-related issues; and certainly we have committed to follow public attitude research and ongoing communications and public affairs programmes to inform us of what those issues are and to trigger discussions and ongoing problem solving.

To carry on, there was a question regarding community cohesion, and within the technical support document we define community cohesion as people's sense of belonging to a self-defined community. We consider it a social asset that contributes to overall community wellbeing. A cohesive community maintains and generates relationships and community pride. It helps define a common vision among its residents that serves to maintain and enhance other community assets and overall wellbeing.

In terms of the DGR's effect on community cohesion, the analysis was done largely through examining what people valued in terms of what drives community cohesion within their community and how the DGR project might interact with that.

So basically a very strong response from

the public attitude research was that people value the small-town community with friendly people. I don't think that there would be anybody that would dispute that everybody likes that and maybe wants more of that.

The adverse effects attributed to the DGR project are not considered likely on community cohesion because the small change in population levels is not expected to affect the small town and friendly feel of communities. We're talking a maximum of 200 people distributed over a wide region commuting -- some choosing to live in the area, some choosing to commute. We don't see that this would be noticeable.

Most people in the Local Study Area do not think that the DGR Project will change their participation in outdoor activities that contribute to community cohesion; the Public Attitude Research indicates that most Local Study Area residents share the belief that the DGR Project will not affect their feelings of health, safety, and satisfaction with community. This kind of demonstrates commonly held attitudes or, at least, broadly held attitudes across study areas, once again, and the residents look forward to the employment and other financial benefits associated with the DGR Project. When asked what are the -- what is the greatest contributor to maintain or enhance community well-being from the DGR

Project, it was jobs and employment.

This demonstrates a common vision: people know what they want.

A little brief on OPG's community involvement and its role in community cohesion: the DGR is expected to strengthen OPG's presence in the community. OPG is and will continue to be a positive contributor to community cohesion as seen by local residents. OPG's community programs and contributions will continue to be noticeable to local people and local residents. Previous contributions include support for over 120 local not-for-profit initiatives and 75 community events and clubs each year, visible out in the community, and there are some examples there: Scottish Festival, the Pumpkinfest, are all big attractions and draw people.

In this context, the DGR Project was developed in partnership with Kincardine and surrounding Bruce County municipalities and the Community Partnership Program was implemented to continue OPG's positive presence in the community.

We are aware that media coverage has raised awareness in the DGR Project. In terms of cohesion, media coverage tends to highlight differences in attitudes among community members. At the time that this assessment was prepared, the media coverage was generally favourable

during the preparation of the EIS and, to a large extent, the media continues to scrutinize and to report on events and processes that inform residents; seasonal residents and permanent residents alike.

In terms of experience with other communities, we looked at examples from Public Activity Research in Clarington, Pickering and Port Hope, as described previously. In all those cases I mentioned previously, satisfaction with living in those communities is high and was not - in Clarington, for example - and was not expected to change as a result of the proposed new build and the waste management facilities as part of that project.

In Pickering, satisfaction with living in that community was also high and did not expect -- was not expected to change as a result of that Pickering Phase II Waste Management. In that particular case, follow-up studies, a follow-up Public Attitude Research was undertaken following some of these projects and that helped verify and backed those conclusions.

Similar conclusions can be seen from the research done in Port Hope where satisfaction with living in the community is also high and has not changed over ten years.

Thank you.

THE CHAIRMAN: Thank you very much.

So, I will lead off the questions from the Panel. So, starting with questions related back to tourism and the use -- seasonal use, in the Huron Provincial Park is one of the socio-economic perks and the enjoyment by this facility by local families and visitors strongly depends on available spaces during the summer season. A transient workforce at the adjacent DGR construction site will likely attract mobile homes of employees, perhaps, to occupy spaces.

Given that the site prep and construction period is projected to last, what, five years plus, we are wondering what measures are envisaged to mitigate as possible the scenario that I just outlined?

MR. WLODARCZYK: Tom Wlodarczyk.

We have to start with whether we believe there is a measurable likely effect and the conclusion they are based on, the trends in use over time, including at times where a much larger transient workforce might have had opportunities to be at the park and interviews with the park superintendents and in the context of the magnitude of the effect in terms of peak workforce of 200 individuals, perhaps spread over a larger regional study area, not all necessarily commuting daily or weekly -- I mean, weekly -- to the site or taking up residence. All

evidence points that we don't see the likelihood of an adverse effect.

In the past, the interviews with the superintendents believe that it hasn't been an issue, frankly. And -- so, we rely on the expertise of that and the superintendents have been there for many years.

THE CHAIRMAN: Thank you.

My next question relates to slide 73 as well as a quote from the Technical supporting document, Section 8.5.3.3 and, also, page 61 of your written submissions. So, quote: "The details - and this is with respect to your evaluation of Stigma - the details - I'm assuming that means explaining the methods for your assessment - including the theoretical framework and relevant published literature are provided in the socio-economic TSD, particularly that aforementioned Section 8.5.3.3."

When the Panel went to that Section, we could not locate a discernible theoretical framework for the evaluation of stigma nor are there any references to the published literature; instead, the section is devoted almost entirely to a description of the results of the Public Attitude Research.

Where might we find the theoretical frameworks supported by literature citations with respect

to the evaluation of stigma?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

I'll have to check the particular sections, but the information presented on slide 73 should be reflected in the TSD whether that is in the baseline section, but I suspect it's in the Effects Assessment Section. We'd have to go back and ---

THE CHAIRMAN: Okay. So, I understand that you'll get back to us on that? Thank you.

The next question I have is based on two things. First, again, I'll quote from your written submission and, in this case, it's on page 61. "There is no strong evidence for the presence of an existing stigma associated with the OPG's existing Western Waste Management Facility and there are no strong indications that the DGR Project would result in a future attribution of a stigma."

Now, I am going to turn to the Hardy Stevenson and Associates Limited peer review and there is an appendix to that peer review, Appendix B, where they have a table that presents their comments and the disposition of those comments and I am referring specifically to comment identification number 60 where Hardy Stevens and Associates -- Stevenson and Associates -

- are identifying that there was a disagreement around the evaluation of stigma and the final entry around the discussion back and forth between Hardy Stevenson and OPG.

Hardy Stevenson says: "The cited projects are similar enough for HSAL to hold firm on the potential for the DGR to create stigma effects, particularly in the wider community. In our experience, programs leading to the avoidance and/or management of stigma effects must be developed, implemented, and then carefully managed."

HL -- ASL (sic) then goes on to say that comment is resolved, but it is not made clear exactly how it was resolved. So is the Panel to understand that this indeed has been resolved, and if so, has this anything to do with the mitigation measures you've listed on slide 74?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The discussions between Hardy Stevenson -- I've participated directly in those discussions between Hardy Stevenson and ourselves -- centred around the fact that, as I mentioned previously, the DGR project will be located within an operating nuclear facility, the western waste management facility, couched in an operating Bruce nuclear site with ongoing communications and consultation and engagement programs, ongoing issues tracking through management systems that were outlined by our previous

speaker.

That the measures that were outlined for the stigma on page 37 have been and will continue to be -- sorry, on Slide 74 -- have been and will continue to be provided or addressed on an ongoing basis.

If I can go through, a publication disclosure of facility performance and monitoring results are occurring currently and will continue to occur.

Central information centre, perhaps you can elaborate, but I believe it's been established.

Ongoing stakeholder engagement, as I said, communications and information exchange is part of OPG's culture.

We've tried to explicitly consider stigma in our effects assessment and try to bound that or understand that to the extent we can.

All these activities certainly lead to building trust and informing publics and educating scientists and others. We've heard what has been done in the past and continues in terms of media briefings, communications with the media to making sure that the information that is available to the public is factual and relevant.

And certainly impact reduction programs such as property value protection program, is being

proposed.

And there are other ways to address issues of stigma through, as I mentioned, the ongoing activities through cohesion, ones that are investment in the community, assets that OPG continues to do and will continue to do.

The DGR project is part of a broader corporate ethic that will continue to address these issues on an ongoing basis.

If I can ask Kevin to elaborate on the information centre.

MR. POWERS: Kevin Powers, for the record.

Again, at OPG we're committed to ongoing two-way dialogue with the communities in which we operate. And a learning centre is one of those tools by which we are able to access the public and the public is able to access us. We are able to provide information on our operations, as well as have the public come in and provide us with any concerns around our operations and address those concerns there.

THE CHAIRPERSON: Could I ask you just to confirm the location of the learning centre?

MR. POWERS: The location of the learning centre -- the exact location of the learning centre has not been confirmed yet.

THE CHAIRPERSON: Okay.

So it's a future learning centre?

MR. POWERS: Kevin Powers, for the record.

That is correct.

THE CHAIRPERSON: Okay.

So, in summary, I understand that you are certainly committed to the mitigation measures listed in slide 74. And did that satisfy the peer reviewers?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The disposition was that the issue was considered resolved.

THE CHAIRPERSON: Thank you.

I had a follow-up to my previous question. I think perhaps we should identify that as Undertaking Number 3 regarding identifying explicitly the theoretical framework accompanied by the appropriate literature citations regarding how stigma was assessed.

I believe, Dr. Muecke, you have a question?

MEMBER MUECKE: Yes.

Could I take you back to the socioeconomic TSD, Section 8.5.3.3 on page 248? And I'll quote:

"A small number of tourists and day users and stakeholders stated that their image of Kincardine might change

as a result of the DGR project.

Because no adverse effects on community character are anticipated as a result of the DGR project, no additional mitigation is identified."

That's a quote. We come back to small numbers. I think we hit those before.

So in this particular case, how can you be sure that you have a sample size which is sufficient, in terms of tourists and day users, to draw the above conclusion?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

In qualitative research, and this is qualitative that has been translated into some numbers, one continues to do interviews with a target in mind until you start hearing the same answer over and over again. And our field work and our field studies after a while did not reveal any new information.

And so we kind of drew the line in saying that we are hearing the same issues, concerns, the same level of response to the same questions. That would be an indicator that we have confidence that if continued on we would not receive any different types of responses. That's basically how the qualitative research component of

this was undertaken.

MEMBER MUECKE: That certainly makes it clear in my mind qualitatively, but being a scientist, I think quantitative.

MR. WLODARCZYK: M'hm.

MEMBER MUECKE: So you're going to have to fill me in a little bit here as to come to these sort of conclusions. Very roughly speaking, what sort of numbers are we talking about? Is it a five in 500, or is it 50 in 100? I have no feel, okay, as to your operational mode, okay, in that. Could you just clue me in a bit?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

I can't put the numbers in the broader context of all the day users that come to the facilities. What I can say is these are indicative. They point to the conclusion. Along with other data, for example, the public attitude research in terms of the attractiveness of the areas, the parks, beaches, the trails also provides indicative information, albeit more quantitative.

Other indications that existing operations, including quite disruptive refurbishments and other activities in the area, have occurred and people continue to visit, use the parks, beaches and trails as they have in the past. These are all indications that effects are

not likely or would be small in magnitude.

To bound that in quantitative terms would be difficult in a qualitative study.

MEMBER MUECKE: Thank you.

I understand it a bit better now.

So when we refer to small numbers here, I should read that as and in conjunction with all other factors?

MR. WLODARCZYK: Yes, that would be helpful. As I said, we try to triangulate and use multiple lines of evidence to support a conclusion.

MEMBER MUECKE: Thank you.

THE CHAIRPERSON: Just for the record, for those participants who are wondering where to find the peer review report, it is number 805 on the registry.

So I have a question, and again, you'll notice a pattern here, we like to quote from your submission.

So with your indulgence I'll once again quote from page 62 of the written submission:

"According to Slovich (1999), the limitations of risk science, among other things, point to the need for an approach that focuses upon introducing more public participation into both

risk assessment and risk decision-making in order to make the decision process more democratic, improve the relevance and quality of technical analysis and increase the legitimacy and public acceptance of the resulting decisions."

In light of the above quote from Slovich, what are the implications for the OPG regarding your plans to build and maintain public trust and acceptance, given that those plans, at least to the Panel, appear to fall mainly in the "inform" category, rather than participation and engagement?

MR. POWERS: Kevin Powers, for the record.

OPG, over the past -- OPG, and the -- through the NWMO, for the past ten years or so, has been involved in quite a few community engagements as previous slides have shown. This is just the beginning of our public affairs outreach and two-way communication with the community at large.

As we continue along on this process, we will be continuing our engagement processes, be they informing the public and listening to the public, and using the information taken from the public to help us better inform and -- better inform the project as we move

ahead.

THE CHAIRPERSON: Thank you. Dr. Muecke.

MEMBER MUECKE: Could we see slide number 73, please?

Coming back to stigma, has there been an analysis of stigma, or how stigma affects different social groups, such as -- taking as an example, tourists, seasonal residents, Aboriginal peoples, permanent residents not employed by the nuclear industry, and permanent residents employed in the nuclear industry?

In other words, has there been any sort of stratification in that survey?

MR. WŁODARCZYK: Tomasz Włodarczyk, for the record.

As mentioned previously, the unit of analysis that we are doing as a community well-being level, that sort of analysis is not -- is not provided, nor given the level of detail in the -- and the types of effects that we're looking at, and the evidence before us, we believe that the community well-being level of analysis is appropriate in this case.

MEMBER MUECKE: Just from my perspective, if we are talking about visitors to the area that goes beyond the community, so -- but it will affect the community if outsiders outside the community perceive a

stigma that is associated with the facility.

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

That is correct. There's a premises, and to -- it's very difficult, frankly, to get an outsider, outside perspective, to do that. We focused in on the tourism, tourist operators, and their expertise, the tourists and day users surveys, and also the public attitude research which, granted, is not -- you know, does not cover all of Ontario or beyond, but does cover off a large area where people continue to use the parks, beaches and trails locally that are attractive to people.

That's the mechanism by which we tapped into those types of issues and concerns.

MEMBER MUECKE: But, just as a last comment here, but you would agree that familiarity changes with distance, obviously, and does that correlate with stigma? At least, in many cases.

MR. WLODARCZYK: Certainly, awareness does correlate with distance, without question. I mean, we see that even in our own public attitude research between the local and the regional study areas -- absolutely.

Once again, whether a stigma does occur, based on the theoretical concepts presented on slide 37, you need these conditions -- preconditions.

A precipitating event or a trigger, people need to get information or seek out information themselves that confirm that they are being threatened, and they need to change their behaviours in relationship to the project.

Without that precipitating event or trigger, the others are not necessary, okay? And in each case, currently, and as we see through our analysis, we don't believe that those preconditions will manifest themselves. Therefore, the conclusion that a stigma is not likely really rests in that logic of analysis.

MEMBER MUECKE: Thank you.

MEMBER ARCHIBALD: I have hopefully a short question. This is on page 64 of the written submission, and on slide 76.

In the written submission there was a quote, again,

"Each of the communities within the LSA and the RSA is developing plans to manage expected population growth and demands for housing and infrastructure, in a sustainable manner."

This, again, deals with stigma. Are these plans any part of OPG's interaction with communities with respect to

effects mitigation?

MR. WLODARCZYK: Tomasz Wlodarczyk, for the record.

OPG's interactions with the municipalities and the service providers is such that they need to understand what the effects might be, when the work first might arrive, what are the issues and concerns in the communities, to allow those with jurisdiction to plan and to implement municipal programs, can undertake that with the best state of knowledge that there is regarding the project.

In that context, these are not mitigation measures, but ongoing ways that OPG and proponents in general interact with their host municipalities.

MEMBER ARCHIBALD: I believe one of the measures that could be taken is to provide information, for example, as to the size of the workforce in such times, because that allows the communities to plan forward. This is what I meant.

MR. WLODARCZYK: And that is -- that is actually a commitment that is -- happens now and will be -- will continue on with the DGR project that is specified in the environmental assessment documentation.

MEMBER ARCHIBLAD: Okay, thank you. This brings me up to a follow-up question and one dear to my

heart.

On page -- sorry, slide 75, where you list educational opportunities, I notice that the first bullet details educational opportunities that have been successful for 14 universities; other international programs, professors and grad students and so on.

You are listing a hosting agreement for international tours and local tours in support of education, and potentially a continuing education facility.

To what extent does OPG intend to provide direct education and training opportunities to students from the LSA and RSA, and would that include Aboriginal students?

How would these programs relate directly to employment opportunities to the project also? That's an addendum to that same question.

And I bring your attention again to the fact that educational opportunities so far list "Universities and other sites external to these local and regional site areas."

MR. SULLIVAN: Gord Sullivan, for the record.

I'll ask Kevin powers to respond to your question.

MR. POWERS: Kevin Powers, for the record.

We have been providing funding to the Kincardine continuing education facility for the past few years. That funding is expected to last through to 2015. There are a number of programs ongoing at that educational facility with the plans for even more programs, some of which will be relevant to -- relevant to employment opportunities around the DGR.

MEMBER ARCHIBALD: In terms of directed -- sorry, direct educational and training opportunities, are any on-site opportunities available to local students, in terms of summer work and/or scholarship opportunities?

MS. PAWLOWSKI: Donna Pawlowski, for the record.

At the OPG's existing waste management facility, as with all of OPG's facilities across Ontario, and we have a number of them, we have developmental co-op positions available for students throughout the year, and we also have summer internship positions available for students.

So those are ongoing opportunities that exist today, and with respect to direct training opportunities, I'll just note, when OPG directly hires employees, we have extensive training programs in place to ensure that any employee that's hired for OPG,

particularly in a nuclear facility, is trained to work in that facility and has continuously qualified against the standards and expectations of their roles. So that's a part of being an OPG employee.

MEMBER ARCHIBALD: Thank you very much. That explains one of the areas that was not well defined before the continuing education. It's a series of words, but didn't explain the process.

I now bring your attention back again to the peer review of the Socioeconomic Environmental Technical Support document by Hardy Stevenson and Associates. Sorry, this is under Comment I.D. number 17. And this particular element, the SHAL initial comment was that:

"OPG states that Bruce County does not have a well-developed nuclear service industry."

Under project response, information response, it is mentioned that:

"A Centre of Energy Excellence will provide learning opportunities for national and international nuclear industry and educational institutions."

SHAL response is:

"We are pleased to see further discussion on the Centre of Excellence. We are looking for additional details. Is this a building staffed with experts and so on."

And they go on further, but I see on the final disposition it still states "discussion required". Is this a resolved element in their initial comment section?

MR. POWERS: Kevin Powers for the record.

This matter is still under discussion between OPG and the Municipality.

MEMBER ARCHIBALD: Additionally, then, would any information be available to the Panel concerning or describing the Centre of Excellence, and could you explain how it would provide educational opportunities locally to LSA, RSA, or Aboriginals, if possible, or is this a site that would only provide very high level training?

MR. POWERS: Kevin Powers for the record.

We'll endeavour to get what we can for you on that.

THE CHAIRPERSON: I understand that is to be Undertaking number 4.

MEMBER ARCHIBALD: Again, thank you very

much.

THE CHAIRPERSON: I'm looking at the time, and I promise we will take a coffee break, but we're almost done with our questions on this section.

Again, in quoting from your submission, in this case, it's page 80, you quote Easterling 1997 where he asserts that:

"The primary lesson to draw from the case study approach is that the impact of a nuclear facility on the local economy depends almost completely on the severity of the events that occur over the lifetime of the facility."

End quote.

The presence of normal operating conditions appears to be the driving assumption supporting the conclusion that the DGR will not pose a threat to community well-being, notably tourism or property values.

What are OPG's plans for mitigation in the event of accidents and malfunctions? Has there been any research into how severe the accident or malfunction has to be to cause a significant adverse effect? Example, is it just a small spill, an explosion, a worker injury, wildlife death or injury? And please note, the Panel is not simply referring to nuclear-related accidents and

malfunctions. In fact, it is more likely that we're talking about conventional during site prep and construction.

MS. BARKER: Diane Barker for the record.

The Environmental Impact Statement does consider a range of malfunction and accident scenarios, including releases of radionuclides as well as conventional accidents. The results of the Environmental Impact Statement indicate that there are no residual adverse effects likely to result from accidents.

In the event of a minor spill, for example, conventional spills are expected to be associated with releases of fuel, small quantities of fuel only are involved with the DGR project so the releases are expected to be very minor. There are expected to be no off-site effects in the event of a spill, for example, which I believe was the bounding accident on conventional. The spill would be cleaned up and any further mitigation that was necessary would be identified and undertaken, but it's expected that cleanup would resolve the issue.

THE CHAIRPERSON: Remind me, did you consider worker death or injury -- a conventional workplace incident or loss time incident all the way up to a very severe consequence and mitigation of same?

MR. KING: Frank King for the record.

There is a -- one of the studies, one of the reports that were submitted is on conventional accidents where the full range of accidents that could occur during the site preparation and construction phase, mining accidents that could occur. So those -- of course the objective there is to have zero impact on workers, so all the programs that we have are targeted at that, but in part of that control mechanism, we do set targets on loss time accidents, for example.

I think your question was mitigation after the accident. If it's a worker injury, then I guess it's just the normal mitigation system that goes on in treating the injury, and of course, the lesson -- learning from those lessons learned and modifying procedures to make sure or try to make sure they don't happen again, that would be standard practice.

THE CHAIRPERSON: Could you remind the Panel where we might find a description of that standard practice?

MR. KING: I'll probably have to take an undertaking. This would be under -- maybe Gord Sullivan can help me there. This would be under the OPG standard governance associated with controlling effects to workers and any reporting that would go on after that. But this would be the same governance that would apply, not only to

this facility, but to the reactors as well.

MR. SULLIVAN: Gord Sullivan for the record.

When we have contractors on site we do have an instruction manual that we follow to ensure that the contractors are aware of the conditions for being on site, and as we turn over that site to them. We also make sure that out of our instruction manual, we -- that they're aware of their need to develop their own health and safety policies, and in those policies they would need to put into practice things that are required should there be an incident on site. And there are requirements in there for them to give us notification, and in our manuals we would follow our process just to make sure those notifications were done.

THE CHAIRPERSON: Thank you.

Dr. Muecke?

MEMBER MUECKE: Yes, can I refer you to your submission, Section 7.2, in which you claim that to have -- to be able to demonstrate experience within migration? But much of that section actually focuses on out migration topics.

So my question is what are the issues and factors that influence out migration of residents from the local study area or regional study area, and where do

health and safety rank as measures of importance in terms of out migration?

MR. WLODARCZYK: Tom Wlodarczyk for the record.

A previous slide, I'm not sure which one it was, it was probably the second one into this section -- if we could try to find that dealing with in-out migration -- outlines the key factors of migration in general in or out. Again, people seek good employment, they seek community well-being, they want to enhance community well-being through good jobs, community atmosphere, community cohesion, schools that they can send their children to and be confident for -- with, and certainly, facilities that tend to their personal and family healthcare needs.

In terms of their feelings of health and safety, we've assumed that these are primary considerations. Okay?

And that is why we've looked at the measures of satisfaction with community, feelings of personal health and safety, and the third one was -- it escapes me now -- satisfaction of the personal health and safety and the third one which I've -- oh confidence in the technologies, yes. And changes in that and how that might affect people, as we call it, their cost benefit analysis.

People who are -- feel satisfied, have confidence in the nuclear technologies in this particular case and have a sense of well-being tend not to move, to not to even consider moving. And those are really the primary factors, they are individually based.

Some people may think jobs are more important than schools but in general, the basic premise is if they're satisfied, confident in the operations, and feel safe and secure that in -- that out-migration shouldn't be an issue. And these may make the area more attractive to people to come in.

MEMBER MUECKE: Thank you. I'll take a hypothetical case now. Okay? If out-migration were to occur, from your experience, what would be the most effective mitigation measures?

MR. WLODARCZYK: Tom Wlodarczyk for the record.

The best mitigation measures are prevention. And we've outlined those measures in detail in terms of what OPG does and was committed to continue to doing so that, once again, people feel satisfied, confident and have a sense of health and safety.

That's the primary objective similar like - - as Mr. King indicated, we're trying to make sure there's zero in terms of injuries. We're trying to maximize those

aspects of community well-being.

In terms of should out-migration be evident, okay, the question becomes whether there is an effect on the other -- the community assets. So, for example, are those people that are out-migrating being replaced by others who are more tolerant of the conditions? Who have made perhaps a different cost-benefit analysis? That -- whether actual observable effects are occurring at a magnitude and scale that we could say are measurable at a community wellbeing level.

I think that the question becomes not how to manage the out-migration as much as whether those effects are manifesting themselves in terms of diminished community well-being.

MEMBER MUECKE: Thank you.

THE CHAIRPERSON: I am very aware that it's time, more than time, for us to take a break. We're not quite finished with our questions for section VII, but let's take a break. Let's reconvene at 25 minutes to 4. Thank you.

--- Upon recessing at 3:18 p.m./

L'audience est suspendue à 15h18

--- Upon resuming at 3:33 p.m./

L'audience est reprise 15h33

THE CHAIRPERSON: Welcome back. We're aiming to be finished by 5, just for everyone's information. We may go a little bit later than that but hopefully not a lot later. The panel have just triaged our questions to expedite things a bit.

So, if we could proceed still with questions regarding section 7. I believe Dr. Muecke, you have the next question?

MEMBER MUECKE: Yes, the last one on that one. In the consideration of community cohesion, did your analysis of community cohesion assume some integration of Aboriginal and non-Aboriginal communities? The communities in that area, there's a large degree of integration and how has that been incorporated into the evaluation of community cohesion?

MR. WLODARCZYK: Tom Wlodarczyk for the record.

The community cohesion assessment, as I mentioned, is largely based on the public attitude research which looked at the public within the study areas. The extent to which Métis individuals or First

Nation individuals are part of that sample is not known.

The analysis and the -- TSD in terms of cohesion does not specifically relate to Aboriginal communities.

MEMBER MUECKE: So the two are treated as separate entities?

MR. WLODARCZYK: Yes, for the most part.

MEMBER MUECKE: Not the end of me. Okay, coming to property value protection plans. And our questions here parallel, to some degree, what appears in the Hardy Stevenson and associates peer review and particularly comments ID'd as No. 18 in Appendix B. But these are basic questions that I have also risen in terms of the panel.

What is the current status of the property values protection plan? Is it by now formally established?

MR. SULLIVAN: Gord Sullivan for the record.

The Property Value Protection Plan is cited in the DGR hosting agreement and the requirement that's in the DGR hosting agreement that it be established when OPG starts operation of the deep geological repository.

MEMBER MUECKE: So just to make sure. Not until the operational phase, not during the construction

phase?

MR. SULLIVAN: That is correct.

MEMBER MUECKE: Now I realize it hasn't been established yet so I'll have to hypothesize a little bit, right? Would it include protection in terms of crops and livestock since you are in an agricultural area?

MR. SULLIVAN: Gord Sullivan for the record.

When the hosting agreement was developed within the Municipality of Kincardine, the area that they specifically put in as a requirement is with relation to radiation contamination. So if it could be established that that was the case then it would extend to that.

Gord Sullivan for the record.

And the other thing I should add is that it needs to be established that it came from the DGR site.

MEMBER MUECKE: So you have confirmed my next question that, in terms of that it only applies to radioactive releases and not to other nuisances that people may perceive like dust or noise. That's all, okay.

MR. SULLIVAN: Gord Sullivan for the record.

That is correct.

MEMBER MUECKE: Again slightly hypothetical because it hasn't happened yet. Would the Property Value

Protection Plan be circulated to neighbouring -- to neighbours or neighbouring properties in order to get their input? Or how -- so in terms of the -- and would it include, for instance, seasonal properties?

MR. SULLIVAN: Gord Sullivan for the record.

I'll have to make a judgement here. I'm assuming that OPG and Municipality Kincardine will enter into those negotiations and detail what the plan looks like.

I'm going to make an assumption that we would likely talk to the other municipalities as well so that they have an idea of what it looks like, but I'm assuming our talks and discussions will be strictly with the Municipality of Kincardine.

MEMBER MUECKE: All right. Thank you.

THE CHAIRPERSON: I believe, Dr. Muecke, we have one more question coming from you on the industrial park.

MEMBER MUECKE: Okay. I didn't cross everything out so, you know; be patient with me.

In the EIS, there's mention of an Inverhuron Industrial Park. And could you tell me what is the status of it at this stage?

MR. KING: Frank King, for the record.

Dr. Muecke, you're talking about the Bruce Energy Centre or what?

MEMBER MUECKE: No, this is lifted straight out of the EIS, Inverhuron Industrial Park and ---

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

MEMBER MUECKE: --- maybe it's -- maybe it changed ---

MR. WLODARCZYK: Yes.

MEMBER MUECKE: --- its name somewhere along the line, but that's what is in there.

MR. WLODARCZYK: If I may speak informally. Yes, the -- it used to be called the Bruce Energy Centre. It's -- and it's because of difficulties in attracting viable -- making viable businesses, multiple attempts have been made to attract new businesses and part of that has been a name change.

MEMBER MUECKE: It has been rechristened.

Thank you.

THE CHAIRPERSON: So to -- this is a follow-up -- so to your knowledge, is there still a concerted effort to create a more viable industrial park? What is the current status?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

Once a park has been established and there's services available, typically municipalities try to attract viable businesses. It started as a kind of an agriculturally-based agribusiness focus now with the other industry; the wind power industries, sustainable green technologies. There's been some talk of doing -- of attracting those types of industries to Kincardine and to the South Bruce area in general; specifically with respect to that park and specific plans; I am not sure at this point.

THE CHAIRPERSON: Thank you.

So we have one final question on this section.

Are you considering the inclusion -- specific inclusion of development of capacity and capability for provision of required project equipment and supplies from the local and regional communities?

So for example, does OPG have plans for informing local suppliers of potential opportunities and perhaps working with them so that they are more -- better equipped to meet -- to take advantage of those opportunities?

MR. SULLIVAN: Gord Sullivan, for the record.

OPG is governed by its procedures and

procurement plans and processes. We also are governed by the Ontario Government's procurement directives that we need to follow. So as long as we keep within that and as long as we make sure that our contracting process is open and transparent -- and we will keep in mind that there are local opportunities and that people can provide to that site; we will do that within those bounds.

THE CHAIRPERSON: Thank you very much.

Now, finally, we're ready to proceed with the noise presentation. Ms. Barker?

MS BARKER: Diane Barker, for the record.

Are we not covering Section 8, Economic Aspects of ---

THE CHAIRPERSON: Oh, sorry, that was my mistake. Yes, sorry. I can tell -- you can tell we're all getting a little tired. Yes, please, let's proceed with the economic aspects.

MS BARKER: All right. Mr. Tom Wlodarczyk will discuss the economic benefits of the DGR project locally and geographically more widespread. He'll also explain how the environmental assessment conclusions on effects on tourism, local parks and property values are reached.

Tom?

**PART 8 - ECONOMIC ASPECTS OF
SITING NUCLEAR FACILITIES**

MR. WLODARCZYK: Thank you. Tom Wlodarczyk, for the record.

Much of this information is -- has been referred to in the past through the economic modelling presentation and others, but I'd like to highlight some of the key things that are contained in the EIS document.

In terms of economic aspects of this facility, the EIS concludes and this assessment concludes that no significant adverse effects are expected. On -- but positive effects in terms of new direct, indirect and induced employment opportunities and labour income are expected within Kincardine and neighbouring municipalities.

We also anticipate increased municipal revenues through property taxes and various one-time payments throughout the development life of the project.

In terms of job creation, the economic analysis that was explained by Mr. Keir indicates that the estimated on-site labour force again is -- during site preparation of construction -- is anticipated to be between 80 and 200 jobs operations; 40 jobs for approximately 40 years and decommissioning between 4 and

125 jobs over a seven-year period.

When examined through the economic model, this equates to approximately 25,000 full-time equivalent person years of employment in total and distributed or allocated to 27 percent in the local study area; roughly the same, 24 percent in -- within the regional study area with the remainder out in -- across Ontario economy and beyond.

These numbers in terms of the on-site direct/indirect employment do not suggest experience, a little more bust effects. Clearly when you have jobs, people get paid and this generates labour income.

The numbers with respect to the site preparation and construction phase amount to approximately 612 million direct/indirect and induced. And in this case, the allocations of total income by area are about 10 percent equally within the regional study area and the local study area, but most of that is, as Mr. Keir referred to, leaking beyond into the province and beyond.

Operations and decommissioning, a different pattern and scenario is evident where we're projecting \$830 million direct/indirect and induced labour income with a greater capture within the local and regional study areas in the order of 55 and -- between 40 and 55 and 35 and 50 percent respectively and a smaller proportion in

the province and beyond.

We've asked -- we've answered a few question regarding local resources and suppliers. As indicated just previously, OPG proposed a source supplies when practicable from local and regional businesses according to the following existing purchasing policies.

When looking at the type of services or materials that might be required for this type of project, they're different than building a nuclear plant itself. The greater emphasis is on aggregate resources, transportation, logistical services, landscaping, maintenance, construction supplies, waste management, sewage and domestic waste.

And as I mentioned, previous Bruce developments have shown many niche services and supplies are required and that typically business -- local businesses tend to take advantage of these opportunities as much as possible and that's -- we don't expect that pattern to change with the DGR project.

In terms of tax revenues, the Bruce Nuclear site, the total tax payments by OPG in 2009 amounted to \$5 million for all lands, buildings and structures. These are paid to the Bruce County and Municipality of Kincardine. Within that, approximately two hundred (200) -- four hundred and seventy-two thousand two hundred

(472,200) was associated with site waste management operations; that is, the Western Waste Management Facility.

The DGR project is expected to increase municipal revenues as a result of on- and off-site development. Property taxes, both on- and off-site associated with new development for -- in making workers or people who choose to take up residence and take up some of that growth will pay new taxes and also new buildings and structures on the site will also generate new taxes. Revenues from land improvements, just payments in move taxes and building permits fees and development charges all go along with that type of development equally apt to developments offsite as well as on the Western Waste Management Facility.

We've already touched upon the effect on tourist accommodations. I'll reiterate our conclusions. This small workforce will generate some competition for temporary accommodations during the construction and decommissioning phases. Experience in local knowledge suggests that this will -- the inflects of transient workers, albeit small, will help maintain economic viability of existing tourism accommodations, particularly during the off-season, but given the magnitude of this workforce, at peak and during operations, definitely, we

don't expect a kind of boom/bust effects from substantial reinvestment in building of campgrounds and hotels and what not.

The effects on provincial parks and tourism are very similar to the way we analyzed the other effects. We examined, once again, the results from other analysis and increased dust or noise levels are not expected at local provincial parks or key tourism attractions; changes in the water quality at local beaches and shore lands are not expected; increased traffic is really basically restricted to access to the facility itself and should not be noticeable to local visitors.

There is no substantial changes in the visible character of the Local Study Area as a result of the project; although it would be visible, it will not block views of Lake Huron and the new above-ground facilities will be visible from Lake Huron, but certainly won't dominate the landscape as compared to existing structures on the Bruce Nuclear Site.

We were asked to look at the literature relating to tourism effects of other nuclear facilities; these are reported in our written submission. To briefly summarize, the available studies do suggest that local population continue to grow near nuclear facilities, people continue to attend the beaches and other

recreational amenities near nuclear facilities. This includes both nuclear facilities, nuclear generating stations and, in this case -- in one case studies in 96, a weapons complex that had brought immediate coverage of nuclear incidents, of environmental incidences, but there is a recognition and it is acknowledged that should radioactive contamination occur, a real possibility exists that tourism would be adversely affected and the extent of that will be communicated and site-specific and -- but there is a general acknowledgement of that possibility in the literature.

Moving to local property values, we already heard some questions regarding that. Just to give you some background: we wanted to put, you know, the trends - - to report on the trends, so we reviewed the database available from the Bruce/Grey/Owen Sound Real Estate Board and interview period with -- I'm sorry, no, the local real estate. We had several reviews, I apologize. That was with cottage guy.

Basically, the data shows that over a large timeframe, from 2001 to 2012, property values have increased by 108 percent in Kincardine and substantially more in Saugeen shores. They do vary year to year, reflecting general states of Ontario's economy, and the activity at the Bruce Nuclear Site is a well-acknowledged

drive of changes in property values and interviews with local realtors confirmed that increasing property values are attributed to the restart in the Bruce A and the growing attraction in recent years to retirees.

In terms of the analysis of effects, the literature generally indicates that property values tend to decline when industrial facilities perform poorly or when the magnitude of certain effects, particularly nuisance effects of noise, dust, and traffic are large and certainly when there's known contamination issues.

The analysis of the nuisance effects for the DGR Project found that, basically, the effects are not likely due to dust levels; nuisance effects were only predicted at a cottage location or the locations near Baie du Doré. Modest increase in the traffic litters are anticipated during site preparation and construction and decommissioning along the access road to the facility. The DGR is not predicted to cause unacceptable levels of service along the local transportation network within the Local Study Area during its operations.

So, effectively, the conclusion is driven by the notion that these nuisance effects, be they noise, dust or traffic, are not a sufficient magnitude to generate effects on property values and, as such, that was the conclusion reached by the TSD.

In addition, as I explained earlier, there is a Property Value Protection Program as part of the Coastal Agreement to address issues of contamination should that become an issue, which is certainly not expected.

Thank you.

THE CHAIRMAN: Thank you very much.

Dr. Archibald?

MEMBER ARCHIBALD: Just one question relating to slides 86 and 87 and this is concerning a number of new jobs and labour income by side areas that could or -- sorry -- are projected to occur.

Are these jobs that are coming from outside the LSA and RSA or would they also be jobs that would be communicated to an existing workforce within these areas?

MR. KEIR: Andy Keir, for the record.

Some of these jobs will be new jobs, but there'll also be a portion of these jobs that are existing in the community and that benefit from the expenditures made by the Project and by expenditures made by project workers.

MEMBER ARCHIBALD: The significant part I'm looking at is the 49 percent of job creation within Ontario and beyond, if these are to be jobs external or in migration jobs, is there any training of the local labour

force that can be contemplated or planned that could create partial replacement of in-migrating labour that would permit local residents to take up this additional percentage of jobs and also potentially mitigate any of the social pressures on housing that they do generally associate with a transit in migrating labour force?

MR. KEIR: Andy Keir, for the record.

Yes. In projects of this nature, large capital projects, there are real opportunities for economic development and it's really the onus of the municipality and the company and the institutions around to really look on how they might develop a strategy to optimize employment retention in the study areas.

MEMBER ARCHIBALD: One last question, then: is it in the purview of OPG to establish training for people under such jobs as part of the contracting services agreements that they would be setting up? Because I don't initially see that the calibre of most of these constructions and operating jobs would be of such a nature that training could not be supplied and supplied to local workers.

Is this a proper assumption to take or is this within OPG's purview for hiring?

MR. SULLIVAN: Gord Sullivan, for the record.

Those people that we do hire to assist us with this type of preparation instruction of this facility, we would be in a position to provide training to those people; that is correct.

THE CHAIRMAN: I have a question related to slide number 91, if that could be brought up, please. The final bullet of 91, slide 91. Thank you.

So, that bullet states: "New above-ground facilities will be visible from Lake Huron, but won't be dominant as compared to existing structures." And this has to do with the broader topic of view sheds which was the subject of some discussions with your peer reviewers again.

And so, I have a question arising out of that dialog that you had with Hardy Stevenson and Associates and this is with respect to comment ID number 15, in Appendix B of the comment disposition for the Hardy Stevenson Peer Review Report. Again, this report is on the Registry as number 805.

In the back and forth between OPG and Hardy and Stevenson, there were some concerns expressed by Hardy and Stevenson that the DGR rock pile, in particular, would become a feature of the viewshed, and the Panel noted that it appears that the DGR rock pile, or waste rock pile, was not in fact addressed in the viewshed analysis? It was

buildings, but not necessarily the viewshed?

First of all, I'd like OPG to confirm if we are correct in that assumption.

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The analysis did include the consideration of the rock pile. I refer to, as an example, to demonstrate that, Figure 8.5.3-5, which clearly shows the above-ground structure and the waste rock pile, as a view from the Bruce power Visitors Centre, and other views as well.

THE CHAIRPERSON: Thank you. That's good to know, that we were -- so we have the correct facts there.

So in light of that then, though, we note that there was an on-going discussion between Hardy and Stevenson and OPG, regarding plans to mitigate the effects of the waste rock pile on the viewshed.

In particular, the Panel is interested, during the site preparation and construction phases, for example, is it the intention of OPG to mitigate the waste rock pile, for example, at the end of the construction period, using such measures as earthwork screening and tree planting? And if so, has OPG consulted with your nearby stakeholders, especially Baie du Doré and

municipal officials regarding these plans?

MB. BARKER: Diane Barker, for the record.

OPG does plan to implement mitigation for the view of the waste rock pile, including berms and tree planting. Those measures could start prior to the completion of site preparation and construction, and are planned to start early so that they have the opportunity to provide that mitigation.

At this stage, I don't believe OPG has had discussions with the neighbours specifically, in terms of what their expectations are.

THE CHAIRPERSON: Thank you very much. I believe that's the end of the Panel's questions on Section 8, so now we really can proceed to Section 9, Noise.

I understand Mr. Da Silva is waiting on the phone to participate? So Ms. Barker?

MS. BARKER: Diane Barker, for the record.

The Noise presentation includes a number of slides at the outset to provide an explanation of the basic noise concepts and terminology. This sets the stage for presentation of information on the effects of noise on humans, wildlife, and livestock.

Mr. Danny Da Silva, who made the presentation on noise modelling at technical information

session 2, will make the presentation.

Danny, go ahead on slide number 96?

PART 9 - NOISE

MR. DA SILVA: Thank you, and good afternoon. For the record, Danny Da Silva of Golder Associates.

Sound pressure level, or noise, is expressed on a logarithmic scale in units of decibels. Since the scale is logarithmic, adding two sounds of the same pressure together will increase levels by 3dB, therefore when you add 50dB plus 50dB you'll end up with 53dB, not 100dB.

Adding sound levels that differ by 10dB or more, results in sound levels that will be equal to the greater of the two levels. So 40dB plus 50 dB equals 50dB.

The human ear responds to the pressure variations in the atmosphere that reach the ear drum. Pressure variations are composed of different frequencies and give each sound we hear its unique character.

In a musical context, if you can consider the sound made by a tuba, which is a much larger instrument that, for example, a piccolo, a tuba would

generate what we would consider to be low frequency sound. A piccolo would generate high frequency sound.

Sounds at different frequencies can be grouped into octave bands. Sound levels at each octave band can then be added to give an overall sound level.

Humans do not hear sounds at all frequencies equally. To approximate the hearing response of humans, sounds at each octave band have a weighting, or A-weighting applied to them. The resulting A-weighted sound level, or dBa , is used to describe how humans respond to noise.

Low frequency sounds contribute less to the overall A-weighted sound level, because human hearing is less sensitive to low frequency sound. If no weighting is applied, the resulting sound level will be in dB_{lin} .

Environmental noise levels vary over time and are described using an energy averaged sound level, or L_{eq} . The L_{eq} is the equivalent continuous sound level which in a stated time, and at a stated location, has the same energy as a time-varying noise level. It is common practice to measure L_{eq} sound levels in order to obtain a representative averaged sound level.

A change in noise level of up to 3dB is considered just perceptible to humans. A change in noise

levels of 3dB occurs when project noise levels are equal to background noise levels. In the example shown previously, that would be 50dB plus 50dB, resulting in a noise level of 53dB.

Changes in noise levels greater than 3dB, but less than or equal to 6dB, are noticeable. Changes in noise levels greater than 6dB, but less than or equal to 10dB, are readily noticeable. A change in noise level greater than 10 dB is perceived to be twice as loud and may be considered disturbing.

The noise assessment in the EIS focused on human responses to noise. Noise levels were assessed at two of the closest dwellings and Inverhuron Provincial Park, noises predicted as A-weighted, dBa, equivalent hourly noise levels, or L_{eq} .

Existing noise levels are those noise levels that exist in the absence of the project. Background noise level equals the quietest existing hourly equivalent noise level.

Project noise levels are those levels that are predicted, based on the noise emissions from the project at a receptor location.

Ambient noise level equals the predicted project noise, plus background noise. In the EIS, adverse noise effects were considered likely if ambient

noise levels were 3dB or more above background, therefore, adverse effects were considered to be likely if project noise levels were equal to or greater than background noise levels.

Adverse noise effects were predicted in areas immediately adjacent to the Bruce nuclear site. Adverse noise effects only extend a short distance into the local study area. Adverse noise effects were only predicted during site preparation and construction, and decommissioning phases at R2, or Baie du Doré, and three additional residences near R2.

Adverse noise effects were not predicted beyond the LSA, therefore no people in the regional study area would be affected by noise. Adverse noise effects were predicted to occur about 24 percent of the time, primarily late at night when people are indoors.

Slide 104 shows how the predicted project noise levels -- where the predicted project noise levels are greater than the background noise levels at R1, R2 and R3. R1 is located to the south and is located at Albert Road. R2 is Baie du Doré, and R3 is located in Inverhuron Provincial Park.

The blue-shaded area shows where the predicted project noise levels during site preparation and construction and decommissioning phases exceed the

background noise level at R2, which is 37 dBA. The yellow area shows where the predicted project noise levels exceed the background noise level at R1, which is 36 dBA, and the red area shows where the project-related noise levels exceed the background noise level at R3, which is 35 dBA.

Slide 105 shows the varying nature of sound at R2. This is shown by the grey-shaded area. The green line shows the project noise levels. The red line shows the minimum hourly L_{eq} that was monitored at R2 or Baie du Doré, and the green-shaded areas show where the project noise levels are greater than the existing noise levels. With the exception of one occurrence, project noise levels exceed existing noise levels typically between the hours of 10:00 p.m. and 4:00 a.m.

For the assessment of human noise effects presented in the EIS, the magnitude of the effect was classified as being low. Geographic extent was rated as medium as effects were predicted in a small area of the LSA near Baie du Doré, adjacent to the Bruce Nuclear site. Timing and duration was rated as low because the adverse noise effects would only occur during the site preparation and construction and decommissioning phases. Frequency was rated as high as the adverse noise effects were determined to occur on a daily basis. However, adverse noise effects were predicted to occur approximately

24 percent of the time, primarily late at night when people are indoors. The degree of irreversibility was rated as low because noise levels will return to normal immediately. In combining all these criteria, the effect was considered not significant.

In assessing noise effects on wildlife and livestock, the use of weighted noise levels, such as A-weighting for humans, could bias the assessment on animals. Wildlife and livestock noise effects were evaluated using unweighted decibels or dB_{Lin} to remove any biases from the predictions, as it represents most of the acoustic energy appropriate for consideration.

Slide 108 shows a comparison of a single measurement between dB_{Lin} and dBA. The blue-shaded area represents the A-weighted sound levels that are indicative of how humans perceive sound, and the red-shaded area is the actual acoustic energy that is measured. That clearly shows how the sound level is adjusted for A-weighting. You can see the lower frequencies, which are to the left of the graph, are adjusted significantly to remove a good portion of the low frequency sound as humans are less sensitive to low frequency noise.

Adverse effects were considered to be possible if project noise levels in dB_{Lin} were equal to or greater than the existing noise levels. Predicted project

noise levels in dB_{Lin} exceed existing levels at some locations within the Bruce Nuclear site or site study area. Predicted noise levels in dB_{Lin} do not exceed existing levels beyond the Bruce Nuclear site.

Slide 110, this shows the extent of the project noise levels and where they exceed the background noise levels in dB_{Lin} at ER1, which is the same location as R2 at Baie du Doré, and another offsite location to the southeast of the site. The blue area shows where the project-related noise levels exceed the background noise levels at the offsite location, and the yellow area shows where the project-related noise levels exceed the background noise levels at ER1. ER1 through ER7 are the ecological receptor locations that were assessed in the Terrestrial Environment TSD.

With respect to noise effects on livestock, the predicted project noise levels in dB_{Lin} exceed existing levels only within the Bruce Nuclear site. There are no livestock present within the Bruce Nuclear site. Predicted noise levels in dB_{Lin} from the DGR project at nearby agricultural land, including pasture and cropland, are below the existing noise levels. Adverse effects on livestock due to noise from the DGR project are not anticipated.

With respect to noise effects on wildlife,

effects on wildlife within the Bruce Nuclear site were evaluated in the Terrestrial Environment Technical Support document. The assessment concluded that changes in noise levels from the DGR project are not likely to adversely affect wildlife.

In summary, for human effect, adverse noise effects occur only during site preparation, and construction and decommissioning phases. Only four residences near Baie du Doré are affected, and adverse noise effects are not significant. For livestock, the ambient noise levels do not exceed existing noise levels beyond the Bruce Nuclear Site, so, therefore, no adverse noise effects on livestock.

For wildlife, the ambient noise levels exceed existing noise levels only within the Bruce Nuclear site. Potential effects on wildlife were assessed as part of the EA, and no adverse effects of noise upon wildlife.

For noise mitigation, all equipment operating during the construction phase and site preparation and construction will be equipped with silencers or mufflers. Additional noise mitigation that is available, natural vegetation on the berms, which will provide noise screening. There are alternative to back-up alarms if they are deemed acceptable to the Ministry of Labour, and alteration of waste rock pile configuration.

Blasting is not expected to be a noise concern. Blasting occurs only three times a day for a short duration. Near surface blasting will only occur during daylight hours and blasting would not measurably affect the overall L_{eq} .

Thank you.

THE CHAIRPERSON: Thank you very much, Mr. Da Silva.

So I have several questions related to noise. The first one is back to the statement, both in your submission and on the slide, that noise effects on humans would be restricted to the site preparation and construction phase, would be of low magnitude, would occur 24 percent of the time, and would primarily occur during night time hours.

The Panel would like a little more clarity on why effects that are predicted to occur approximately one-quarter of the time, specifically during night time, which are typically sensitive hours for those of us who might be light sleepers, would fall into the low magnitude category.

So could you assist us a bit more in understanding how that fell into the low category please?

MR. Da SILVA: Danny Da Silva, for the record.

The low magnitude was attributed to the change in noise level associated with the operations of the project -- sorry, with the construction and site preparation phase of the project.

The resulting change would still comply or meet the requirements of the World Health Organization. The overall noise level at the R2 receptor would be 42 dBA. The World Health Organization recommends a level no greater than 45 dBA to ensure an indoor noise level in a bedroom with a partially opened window of 30 dBA. Therefore, we are below World Health Organization guidance.

THE CHAIRPERSON: Thank you.

That was actually very helpful.

With respect to slide number 105, this is your figure showing the time varying nature of noise at receptor location R2. So it's interesting that you're using a time varying value for existing noise.

Could you also use a time varying or produce a time varying value for predicted project noise? In other words, is it possible to predict the diurnal variations of project noise?

MR. Da SILVA: Danny Da Silva, for the record.

It would be possible to generate a model of

that nature. However, it would require a significant amount of information related to how each piece of equipment would be moving on the site, where they would be operating, and their noise emissions for the different types of operations that they would be carrying out.

What has been done in this assessment has been maximum noise emissions from each piece of equipment at locations that would generate the highest offsite noise levels.

So this is likely a much more conservative approach in comparison to using a diurnal type variation in operations.

THE CHAIRPERSON: Thank you.

So, in other words, you're confident that your predicted noise levels do not underestimate the actual time varying noise during site construction -- site prep and construction?

MR. Da SILVA: Danny Da Silva, for the record.

Yes. As indicated in technical information session two, the emissions that were used were maximum emissions. There were significant opportunities for attenuating factors that were not considered in the model that would further reduce the offsite noise levels. So I am confident that the predicted levels, as provided in our

technical support document, will not be exceeded.

THE CHAIRPERSON: Thank you.

Now if we could move to the evaluation of noise effects on livestock. In the written submission, you cite a reference, Strane 2013. And we understand that this stated reference, Strane 2013, shows the higher frequency hearing level of cows and sheep, which would be representative livestock, to be approximately only one octave above that of humans.

So we were wondering why are you suggesting utilization of dB_{Lin} as compared to dBA. In an animal with much larger ears, such as elephants, which is also cited in Strane, it certainly does have a much lower frequency hearing range. But to our eyes anyway when we looked at Strane's table, the cows and sheep actually have a much more similar range to humans.

Therefore, would not dBA be more representative, and following this logic, why not revert to monitored dBA levels and why would you not use 37 dBA such as those that occur at the monitoring site R2?

MR. Da SILVA: Danny Da Silva, for the record.

Although the frequency ranges may be similar, the sensitivities at each individual frequency or octave band may or may not be similar. The A-weighting

filter, which is applied for the assessment of noise on humans, is specific to our sensitivity related to noise.

We are less sensitive to low frequency noise levels. Therefore, there is a significant adjustment in the low frequency band, so octave bands or third octave bands, that reduces that level.

Just because a cow may have a similar hearing ranger, in terms of, you know, 20 Hz to 20,000 Hz, for example, its individual sensitivities at the different frequencies may not be the same. And that is one of the difficulties in assessing noise on wildlife is understanding those individual sensitivities that are not available.

THE CHAIRPERSON: So am I to understand that there are no sensitivity data available for cows and sheep or other relevant livestock?

MR. Da SILVA: Danny Da Silva, for the record.

To acquire that type of information would require testing similar to that done for humans back in the late 1920s, early 1930s. And these curves are based on perception and involve cognitive reasoning and understanding with respect to commenting on how a specific sound level is perceived relative to another. So it would be unlikely that we would have such curves.

THE CHAIRPERSON: Have you checked the veterinary medicine literature to confirm the lack of such information?

MR. Da SILVA: Danny Da Silva, for the record.

We've got a database of references that we have. I would have to look into whether or not they include veterinary medicine.

THE CHAIRPERSON: The Panel would very much appreciate confirmation of any information that might be available from literature regarding sensitivity of livestock. So if we could ask for an undertaking with respect to that.

That would be Undertaking Number 5, provision of any literature references regarding the sensitivity of relevant livestock, in particular cow -- cattle, and also including sheep or other relevant species for this study area, such that the Panel can be convinced that the information simply is not available to create a little bit more confidence in our ability to assess the effect of noise on livestock.

MS BARKER: Diane Barker, for the record. We will undertake to provide that information.

THE CHAIRPERSON: Thank you very much.

I'd like to move now to some of the mitigation that was suggested.

We understand that noise barriers have the greatest sound attenuating performance when located either very close to the noise source or very close to the receptor and are minimally effective when situated between the source and receptor.

So even if the waste rock piles are being considered as noise barriers, how much A-weighted sound attenuation do you think could actually be achievable?

MR. Da SILVA: Danny Da Silva, for the record.

We have not modelled the waste rock piles onsite. However, if they were configured in such a way that they would block the line of sight between the various sources onsite and the offsite receptor locations, and specifically R2, I would anticipate that we could get between a five and 10 dB reduction.

THE CHAIRPERSON: Does OPG anticipate that you might be conducting some confirmatory modelling in terms of the effectiveness of said mitigation?

MS BARKER: Diane Barker, for the record. There are no current plans to undertake additional noise modelling at this time.

THE CHAIRPERSON: Thank you.

Another question regarding -- this is with respect to vegetation. On Slide 114, there's reference to natural vegetation on berms which would provide what is termed as noise screening. Again, I guess I already know the answer to this. So, Mr. Da Silva, you obviously haven't had a chance to model this, but in your experience, what difference does it make in terms of a A-weighted sound detonation with and without vegetation?

MR. DA SILVA: Danny Da Silva, for the record.

A barrier or a berm, in this respect, with vegetation on it becomes -- we refer to it as acoustically soft. So the ground effect increases and will actually remove or reduce the overall level as it passes over the berm or barrier. So it actually is beneficial to vegetate the berms, if possible.

THE CHAIRPERSON: Thank you.

Now, with respect to effects of noise on wildlife, you made the point that any noise had potential adverse effects of noise on wildlife, would only be within the site study area. However, there have been listed species identified on the project area, the specific site project area.

So to your knowledge, Mr. Da Silva, did your colleagues work with you to determine whether or not

there were particular listed species that would be of greater concern with respect to the potential adverse effects of noise?

MS BARKER: Dianne Barker, for the record.

The results of the noise study were provided to both the aquatic specialists and the terrestrial specialists for consideration in the assessment of effects to the relevant iota. So those have been taken into consideration.

THE CHAIRPERSON: So with that, I guess I would gather that they concluded that even listed species would not experience significant adverse effects.

MS BARKER: The results of both the aquatic and terrestrial assessments concluded that there were no adverse effects. That is correct.

THE CHAIRPERSON: Okay. So a follow up with that, would you, Ms. Barker, know if there were additional, or any, references, because we couldn't find them in the EIS, with respect to the specific sensitivity of wildlife species of concern to this level of adverse noise?

MS BARKER: Dianne Barker, for the record.

I'm not aware of any references that were -

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THE CHAIRPERSON: Thank you.

So a similar undertaking, please.

Undertaking number 6. You could see this coming. We would very much appreciate it if OPG, if possible, could provide us with any and all literature that might pertain to the effects of noise on wildlife. We understand it's a difficult area, it's an emerging area. But we noted the absence of said citations, so we'd be interested if we could see some, if any.

MS BARKER: Dianne Barker, for the record.

We'll undertake to provide any information that we can find.

MEMBER MUECKE: Mr. Da Silva, could I ask you about the -- whether there could be sporadic enhancements of sound levels arising, let's say, in the case of unidirectional winds and how much influence that would have?

MR. DA SILVA: Danny Da Silva for the record.

The modelling that was carried out implicitly includes a downwind, or temperature inversion condition; and what this does, it puts each receptor automatically downwind from each source at the same time.

So it -- with regards to the specific bounds of the model, it's unlikely that there would be sporadic increases in noise, as much of that has already

been addressed. If the wind speeds were to increase significantly where downwind propagation would increase, what is likely to occur at the same time is that the background noise level would also increase from other sources and just ambient noise in the area. So it may actually be masked in the increased wind.

MEMBER MUECKE: Just as a little follow up, in terms of the modelling, what sort of wind speeds do you go up to?

MR. DA SILVA: Danny Da Silva, for the record.

I don't have that at my fingertips right at the moment. But it was noted in technical information session two.

MEMBER MUECKE: Thank you.

MEMBER ARCHIBALD: Mr. Da Silva, most of the discussion so far has been to the impacts of noise on nearest neighbours and such. In the case of blasting, there will also be ground shock or seismic effects. Do you have or foresee any need to conduct pre-construction blast damage surveys at nearest neighbour residences? Sorry, maybe I should address this to the Proponents.

MS BARKER: Dianne Barker, for the record.

As a part of the assessment, vibration calculations were done. There have also -- there's also

been experience with blasting at the Bruce nuclear site, most recently with the demolition of the Bruce heavy water plant. The results of that, and our expected vibration resulting from the DGR project, indicates the most sensitive receptors are on the Bruce nuclear site in terms of tripping, and there is no effect expected to result from the DGR project.

MEMBER ARCHIBALD: It is common, however, when new construction projects are undergoing. It's not so much to monitor the seismic impact as to do a damage survey, a pre-damage survey for mitigating any social conscious. If the people are worried about the effects of damage to their houses, or structural damage, or other shock, this is a normal feature of construction projects, whether or not it's anticipated that the shock will be there. But it's a pre-damage survey such as taking photographs, or videotaping for evidence. Would this be anticipated in any way, shape, or form?

MS BARKER: Dianne Barker, for the record.

There are no current plans to undertake any pre-construction monitoring largely based on the expectation that there would be no offsite effects resulting from blasting vibration.

MEMBER ARCHIBALD: Thank you.

Yes, one last question, and this is

concerning the comment for disposition of Hardy Stevenson and Associates Limited in their peer review report CR-805. This is comment ID number 79 and this is at the back end of Appendix B.

In this particular case there is a disagree statement by H.S.A.L. concerning the disposition of the public attitude research to measure levels of noise and dust experienced at offsite receptors. Would you have any comment on whether this disagreement by the peer review group has been settled, and how?

MS BARKER: Dianne Barker, for the record.

I believe that H.S.A.L.'s original comment was based on the understanding that only public attitude research would be done to assess potential effects of noise and dust. We provided them information indicating that there will be air monitoring, there will be noise monitoring, and these monitoring programs are projected, not in the socio-economic effects assessment, but in the other TSDs.

So they now have confidence that OPG will not rely solely on public attitude research to assess any potential effects of nuisance.

MEMBER ARCHIBALD: That's fine. Thank you. It's just not showing up in the final disposition column of this report. Thank you again.

THE CHAIRPERSON: I believe that is the conclusion of the Panel's questions on noise. Thank you, Mr. Da Silva.

So now we can proceed with section 10, the final section of today's proceedings on cumulative socio-economic effects. Ms. Barker?

MS BARKER: Dianne Barker, for the record.

Mr. Tomasz Wlodarczyk will make the final presentation in the third technical information session.

This presentation discusses the interactions over time among socioeconomic-valued ecosystem components. The material will be presented in the context of the community wellbeing framework.

Mr. Wlodarczyk.

PART 10 - CUMULATIVE SOCIOECONOMIC EFFECTS

MR. WLODARCZYK: Thank you. Tom Wlodarczyk, for the record.

Cumulative effects assessment, particularly when it comes to socioeconomic effects is a challenge, so we tried to consider it in different ways. The first way is in accordance with guidance offered by the Canadian Environmental Agency in a guideline document, or actually a guidance document developed in 1999. We also tried to

make sure that our assessment considers potential interactions among VECs; those are VECs natural environment, VECs, and socioeconomic VECs.

Also from an economic and infrastructure prospective placing the predicative effects in the context of local study area and regional study area growth trends. And, ultimately, where possible, highlighting implications of the DGR project on the community wellbeing.

Our technical support document presents this pentagon diagram which is intended to illustrate the community wellbeing framework. As indicated by Madam Chair, community wellbeing could be defined in many ways by many people and theorists and community members alike. For the purpose of this socioeconomic assessment we took the definition that it takes an asset framework; that is, a state of human, financial, physical, social, and natural assets possessed or desired by a community which enable its residents, organizations and institutions to support each other in performing all the functions of life and developing their maximum potential. The diagram there indicates how the assessment framework addresses the various socioeconomic VECs and in the centre of the pentagon the public attitudes with respect to the key indicators of satisfaction, confidence, et cetera.

So taking a look at applying the guidance

from the Canadian Environmental Assessment Agency, this guidance states that:

"Consideration must be given to residual adverse effects that can combine with effects associated with past, present or reasonably foreseeable projects."

As we discussed today, one residual socio adverse effect was identified, and this related to a decreased enjoyment of personal property at Baie du Doré resulting from increased noise levels. In applying this, the noise analysis indicated that increased noise levels are not likely in combination with future projects. That, coupled with the little growth in the Baie du Doré area in the past, and limited development envisaged into the foreseeable future, adverse cumulative effects were not considered likely.

We also heard from Mr. Da Silva the conservative nature of the analysis and that demonstrates the application of the precautionary principle in this case.

In terms of examining potential interaction among VECs, we referred many times to the way the assessment considered changes to the socioeconomic VECs from the results of other studies in terms of air quality,

noise, surface water quality and quantity, groundwater quality and quantity, flow, aquatic and terrestrial environments and the radioactivity aspects of the project.

Interactions amongst socioeconomic VECs are inherent in the framework in the way we addressed the community wellbeing through the pentagon diagram. And in this case, this is just an example, if you kind of follow the logical trend, I guess, or thought pattern, the DGR employment has effects on population -- we examined those quantitatively -- the potential changes to population, and demographics on housing, community character, and community cohesion were then examined. And then the implications of those changes in character and cohesion on community wellbeing are highlighted. So it's through a logic of analysis leading up to conclusions, where we could, on a community wellbeing, at that level.

The Panel members asked specific questions regarding a number of specific issues so we have restricted our presentation to those. We've spoken extensively on the consideration of in-and-out migration.

In this case the effects of the DGR project considered, were considered in the context of projected population growth up to 2062. As Mr. Kier indicated some of it's projected in official documents and others were extrapolated. And we also considered current population

mobility patterns to see the patterns that are available and how the DGR project might change those.

Prediction is that there will be increased population associated with the DGR project and that little out-migration is anticipated. Overall, no likely adverse effects on populate demographic VECs were identified but, as I have mentioned previously, whether this is a positive or negative force on that pentagon can be debated. In this case, we concluded in our technical support document that this might have neutral implications on community well-being overall.

In terms of employment effects, previous presentations quantified the employment and income effects. Again, these effects are considered in the context of projected employment growth and the current labour force characteristics. The numbers and the distribution of jobs do not suggest any potential for boom/bust effects. The DGR employment will remain modest in comparison to other projects on the Bruce Nuclear site but nevertheless given the importance that our respondents to public attitude research and through our engagement activities it is clearly seen as a positive contributor to overall community wellbeing.

In terms of consideration of stigma, much discussion today was with respect to that. Again, to

reiterate; no strong indications that a stigma currently exists. And in this case stigma was considered as a pathway to potential effects on other VECs such as tourism and population. The public attitude research and other studies indicated that wide spread changes in people's attitudes are not expected and that the DGR effectively represents a strengthening of an existing nuclear presence. Overall implications on community wellbeing were considered neutral.

With respect to education and training the effects of the DGR project were considered in the context of projected school enrolment and existing labour supply context. No adverse effects on education, skills or labour supply as described under human assets VECs were predicted. As indicated, the DGR can provide increased educational opportunities through scientific-related activities, centres of excellence which will evolve as the project proceeds. This again was seen as a positive contributor to overall community wellbeing in the sense that it strengthens the overall thrust of a high-end nuclear facility that is safe and is a world-class facility.

In consideration of demographics the effects of the DGR considered magnitude effects on population in the context of planned population growth and

known demographic trends. The numbers and distribution of jobs do not suggest any noticeable changes in community demographics, age, gender, family size or composition, given the current population levels, the expected population that might determine to settle. Nevertheless the overall implication for community wellbeing has been judged to be neutral in this particular case.

Community wellbeing overall, the DGR is seen, and we have provided evidence, to demonstrate that it is seen as a positive contributor to community wellbeing overall through increased employment activities, labour income and business activity, educational opportunities, and the potential for increased municipal revenues. No significant adverse effects on socio-environment, cumulative or otherwise, are anticipated that could diminish community wellbeing.

Thank you.

THE CHAIRPERSON: Thank you very much.

I have one question that occurred to me as I was looking at the slide with respect to municipal revenues and the adverse of that which is demand on municipal services. So we didn't ask you explicitly for this but could you briefly comment on what if any effects there may be from the need to, for example, upgrade infrastructure, in particular roads, or -- I remember you

did say it was a very minor impact on demands on health care and things like that. But remind me what your conclusions were with respect to roads and traffic.

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

The conclusions with respect to infrastructure in general that there are no significant adverse effects; actually, very few noticeable and measurable effects on these -- that components of infrastructure, therefore, mitigation measures are not anticipated in terms of physical investment in infrastructure.

In terms of traffic, it will be a contributor to changes in -- you know, in traffic patterns at the site. It can be mitigated through standard practice mitigations that are outlined in our TSD; cooperating, you know, with our contractors, timing of bulk deliveries; measures such as that that would be included and considered in the development of a traffic-management plan.

THE CHAIRPERSON: Thank you.

And one additional question and it's not really related necessarily to cumulative effects, but we're just wrapping up with everything that might be left over in our minds.

I think it was this morning we were talking about the hosting agreement and we noted that there were community payments to Kincardine. Are those earmarked for specific activities or do they just go into general revenues?

MR. SULLIVAN: Gord Sullivan, for the record.

Those payments are made to the Municipality of Kincardine and we don't earmark them for any specific infrastructure or anything like that. We allow the municipality to determine how to use that -- those money.

THE CHAIRPERSON: Thank you.

Dr. Archibald, did you have a question?

MEMBER ARCHIBALD: One last final one, this is again from the Hardy Stevenson and Associates Limited peer review of the socio-economic environmental technical support document. This is comment ID 69. There are several potential residual effects identified by this group that were to be further discussed and their interest to the Panel; one being comment 69.4:

"Does OPG now have specific traffic mitigation plans?"

And this is based upon the concern for increased pressure of traffic systems that will be managed through a traffic-management plan.

"Does OPG now have a specific traffic mitigation plan online?"

MS BARKER: Diane Barker, for the record.

OPG does propose traffic-mitigation measures. The specific details of the traffic-management plan have not been worked out at this point.

MEMBER ARCHIBALD: I assume that these will be in consultation with the municipal and/or provincial officials then when they come forward?

MS BARKER: Diane Barker, for the record.

They will certainly be in consultation with municipal authorities. The EIS does not really anticipate any effects on provincial roads.

MEMBER ARCHIBALD: Thank you for that.

One other concern was the potential over reliance on the capability of mine rescue workers out in Goderich; this being the Goderich salt mine, because we had already talked previously about the necessity to have two working mine rescue teams, in any event, for an underground operation such as the DGR and the need for appropriate training for mine rescue staff in a radioactive environment.

The concern there is what training will be given by OPG to mine rescue workers from Goderich that would be useful for working in a radioactive environment

such as the DGR?

MR. SULLIVAN: Gord Sullivan, for the record.

If we strike an agreement with Goderich facility and if we are asking them to come on our facility then they would require training that all people get when they come on to our facility. So we would make them aware of the nature of being on a radioactive site, make them aware of the emergency protocols and have sponsors for them.

MEMBER ARCHIBALD: And I imagine this training would have to be an annual basis because these teams rotate in and out in the workforces from the other mines also do so?

MR. SULLIVAN: Gord Sullivan, for the record.

That is correct. We would log who comes in. We would log their training and have those in databases and we would ensure that any of the recalls -- what we call recall trainings would be done.

MEMBER ARCHIBALD: One last question: Was the disposition -- this discussion that was required by Hardy Stevenson and Associates Limited carried through with them?

I noticed that the final disposition that

comments are resolved and yet there's nothing in the final disposition column that states that it was resolved.

MS BARKER: Diane Barker, for the record.

We do not have the details of HSAL's reasoning for accepting the disposition of this comment at this time.

MEMBER ARCHIBALD: All right.

Thank you.

THE CHAIRPERSON: Dr. Muecke?

MEMBER MUECKE: Yes, just one last point which arose this morning and it has to do with when does an adverse impact become significant and in particular with respect to noise?

And so I was -- we were given to understand that if the impact -- adverse impact is on a community level, it would be considered adverse, but if it is confined to, in this case, let's say four residences, it would not be considered adverse.

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

To be clear, the noise assessment assesses noise from a technical, regulatory perspective, while the socio-economic TSD tries to interpret that in terms of use and -- or use and enjoyment of property. And so it's -- in this case, it's a combination of both the social impact

assessment information that we do have and the results of the noise analysis. So it's not strictly a dBA issue in this particular case because we are looking at use and enjoyment of property.

MEMBER MUECKE: Okay.

Is this consistent with practice elsewhere?

MR. WLODARCZYK: Tom Wlodarczyk, for the record.

It is consistent with socio-economic practice that I'm aware of.

THE CHAIRPERSON: It appears that concludes the proceedings for today. And I'm very proud to say before 5 o'clock.

Thank you so much to everyone for participating today in this final technical information session; those of you who have attended in person and through the internet.

I also want to thank the presenters and to those who participated on the phone.

I would remind everyone that if you have a question regarding the information presented today, you are encouraged to submit your written questions to the Panel's co-managers as soon as possible.

Thank you very much and have a good evening.

Yes?

MR. KING: Frank King, for the record.

Just a final comment on the undertakings.

THE CHAIRPERSON: Yes.

MR. KING: But before I get there, I think we can take one of them off the list right now.

THE CHAIRPERSON: Okay, good.

MR. KING: Undertaking Number 3, Mr. Wlodarczyk I think has found an answer for that.

MR. WLODARCZYK: Thank you. Tom Wlodarczyk, for the record.

We were asked to point the Panel to where the discussion of the theoretical framework is with regarding stigma. This -- I can say that the reference in the technical -- sorry, in the written submission should read, Section 8.1.1 of the Socio-economic Technical Support Document which is on pages 194 and 155 -- to 195 and these are effectively what is presented in the written submission.

THE CHAIRPERSON: Thank you very much.

MR. KING: Frank King again.

One final comment on the undertakings: What we will do if it's okay with the Panel is next week we'll advise the Secretariat when we can respond to the undertakings. I expect, based on our initial review, we

should be able to do that by April 15th.

THE CHAIRPERSON: Thank you very much.

Was that it?

Great.

Safe trip home everyone.

--- Upon adjourning at 4:58

L'audience est levée à 16h58